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SOUTH AUSTRALIA
IN 1887.



The Hon J. H. Howe M.P.

With W. J. Scott's Compliments

23 September 1887

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SOUTH AUSTRALIA IN 1887.



A HANDBOOK

FOR THE

ADELAIDE

JUBILEE INTERNATIONAL EXHIBITION.

WITH

INTRODUCTION BY SIR SAMUEL DAVENPORT, K.C.M.G., LL.D.

COMPILED BY H. J. SCOTT.

21

Adelaide:

BY AUTHORITY: E. SPILLER, GOVERNMENT PRINTER, NORTH-TERRACE.

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ADELAIDE

Jubilee International Exhibition, 1887.

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Wans 27 Mar. 1944

The Royal Commissioners for South Australia at the Adelaide Jubilee International Exhibition, 1887, having requested me to compile and edit a handbook showing the progress of the colony after fifty years existence, I have endeavored to obtain the most accurate information from those in a responsible position and best qualified to supply reliable statements concerning "South Australia as it is," after a life of fifty years.

At no period has it been my intention to make this handbook an historical record, because at previous exhibitions an exhaustive history of the colony, from the points of view of the different writers, has been ably placed before the public; but the object now is to present to readers the position of South Australia at this day.

I desire here to tender my thanks to the officers of the different departments concerned for the valuable help they have rendered, also to other gentlemen connected with the products and manufactures of the colony, and to my colleague, Mr. S. V. Pizey, for their able assistance.

H. J. SCOTT.

Fernleigh Cottage,

Norwood,

South Australia.

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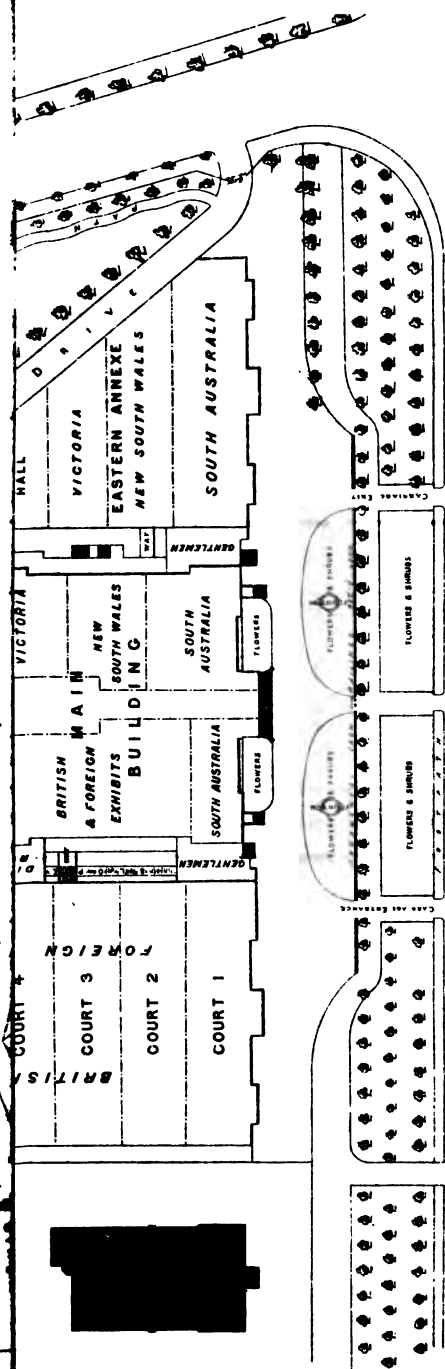


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ADELAIDE JUBILEE INTERNATIONAL EXHIBITION.

Ground Plan of Main Building and Annexes, showing the positions of the Exhibits of the Several Countries.



N O R T H T E S T A C B

Photo-Collographed by E. SPILLER, GOVERNMENT PRINTER, Adelaide.

THE ADELAIDE JUBILEE INTERNATIONAL EXHIBITION, 1887.

The history of nations for many centuries back contains a record of Exhibitions, whether they are called "International" or merely "fairs," yet the fact remains that the enterprise of merchants, the glory of individuals, and the curiosity of the populace have all tended to one grand result, that of inciting artisans and skilled workers by comparison to greater exertions to endeavor to produce something better than that of their fellows. Hence it has been considered fitting that the jubilee of our colony should be celebrated by an Exhibition of Arts and Industries, showing not only what we in this colony have done during the last fifty years, but by inviting comparison with the skilled products of other countries show to our artisans what may be accomplished in the future.

Going back to ancient history, we find that some five hundred years before the birth of our Lord, "Ahasuerus showed the riches of his glorious kingdom and the honor of his excellent majesty for many days." From thence through the centuries when Imperial Rome gathered together the spoils of war and the triumphs of peace, and when Rome had fallen and Venice was queen city of the seas, exhibitions were held illustrative of the arts and industries of that merchant city. The fairs which in the middle ages were held on the continent of Europe, notably at Leipzig, may well be likened to the great exhibitions, as they attracted from all parts, merchants showing cunningly wrought armour, richly designed silks, gold and silver embroidery and jewellery, and as evidence of their utility it may be mentioned that the fair of Nijni Novgorod has been held in Russia for the last three hundred years, and at the present day an iron structure comprising 2,500 shops affords accommodation for the annual gathering of merchants from the East, but it was reserved to the master mind of the great Napoleon to realize the advantages likely to accrue to a country by bringing the manufacturers into comparison and instituting the system of jurors and awards, for we read that in 1798, Napoleon, as first consul, invited the recipients of the "gold

medal" at the Paris Exhibition to a public dinner, and this is the first recorded recognition of the manufacturing classes as an important factor in the welfare of any country. For upwards of a century *National Exhibitions* have been held in every capital in Europe, but it was not until 1851 that the Prince Consort (Albert the Good) inaugurated the first of a series of *International Exhibitions* grouped under four main heads :—(1) Raw materials ; (2) Machinery and mechanical inventions ; (3) Manufactures ; (4) Fine arts. The happy result of that exhibition, together with the leaps and bounds made by art and science in designing, inventing and perfecting machinery to economise labor, has led to exhibitions being held in all parts of the known world—at Paris, Vienna, Moscow, Philadelphia, Florence, Athens, Sydney, and Melbourne ; aye, even in Japan the Buddhist temple at Kiôto was used for the display of a collection of the arts and industries of that newly awakened Empire ; whilst at Calcutta the Imperial Museum, containing statues, relics, &c., of Buddha, Vishna, Ganish, and the thousand and one deities of the Indian Empire were thrust aside, and the magnificent building in Chowringhee was filled with show cases containing the manufactures of the western world.

Only last year the display of products and manufactures under Her Majesty's dominion was shown at the Colonial and Indian Exhibition, where the exhibits were from an empire upon which the sun never sets, and whose products are sufficient in themselves to supply all the wants of the empire, from the coldest extremity of the dominion in Canada to the warmest spot upon the earth in India and the East. That Exhibition has done more to knit together the component parts of the Empire into one harmonious whole than the united statesmanship and efforts of the Parliaments of all Her Majesty's possessions.

Our Jubilee Exhibition, therefore, is one unit in that process of welding commenced in 1880 after the display carried on in Melbourne and Sydney. At the private Exhibition in Adelaide of Mr. Joubert's, it may be mentioned that that Exhibition was open less than three months ; it averaged a daily attendance of 4,878, the total of which was 276,692 ; and the returns from entrance fees was £10,439 15s. 6d.

Our Jubilee Exhibition is inaugurated under very auspicious circumstances. The Government of the colony have erected the main building without cost to the promoters ; they have given every facility to exhibitors ; the customs authorities do not wrap them-

selves in a cloak of officialism; and one and all vie with each other to make it a success. Its first conception was due to some of the members of Parliament, who, after their return from the Melbourne Exhibition in 1881, urged our Government to make a fitting celebration of our jubilee. In 1883 that expression of feeling found vent in a resolution to erect a proper building with appurtenances suitable to the occasion; but in the following year a new Ministry came into power—they gave way to the representations of the country members, who, with a very near-sighted policy, considered that the expenditure of nearly two hundred thousand pounds, as was then proposed, in the erection and management of a Jubilee Exhibition, would not be a benefit to the country at large. Their opinions for the time prevailed, and a Repealing Act was passed; but since then not one of the members of our Parliament but has regretted his want of confidence in the recuperative powers of our country, and the energy and enthusiasm of the prime mover in the scheme of a guaranteed exhibition, Mr. E. T. Smith, merits the favor of his sovereign and the gratitude of his fellow-citizens.

The Exhibition buildings are situate upon the slope of a hill, bounded by North-terrace on the one side and Frome-road on the other. In the centre is the main building, designed by Withall and Wells, the architects, for the future use of the Agricultural Society, the Chamber of Manufactures, and a proposed Technological Museum, for which the first donation has already been received from the Indian Government as an out-come of the Calcutta Exhibition. The main building covers an area of upwards of a square acre, comprised in basement, main and upper floors; the central hall is surrounded by a spacious gallery giving approach to the fine arts court, over which towers a handsome and lofty dome. From its summit a bird's-eye view can be had of the country for twelve miles surrounding Adelaide. On right and left are annexes built for the accommodation of exhibits respectively from the old country and from the new, whilst on the north side of the building the grand promenade affords a pleasant walk for all those whose duties detain them inside the greater part of the day, and for our country cousins who prefer not to be cribbed and cabined when they visit the Adelaide Jubilee International Exhibition.

From the terrace of the main building a splendid view of North Adelaide is obtained; lying at foot is the grand promenade, with the Northern Territory exhibits to the right. Further on is the

northern annexe, which contains much that is of value in the manufacturing and industrial section of the Exhibition ; to the left is the armoury, containing the grand exhibit sent out by Her Majesty's Government, showing the models and actual sizes of the destructive engines of modern warfare, in the building known as the Armament hall. Other buildings containing instructive exhibits intervene, until the embodiment of science and invention is met with in the machinery hall, where engines and machinery, whose automatic power is the wonder of all visitors, can be seen in full operation acting as the willing servants of man.

INTRODUCTION.

(By Sir Samuel Davenport, K.C.M.G.)

Taking for the date of its birth that day on which its first Governor landed and planted the British flag on the shores at Glenelg, December 28th, 1836, South Australia completed its fiftieth year on the 28th December last; and hence our jubilee.

South Australia was not the offshoot from another colony. It was a distinct and independent individual; not a cutting nor a layer, but with roots and stem and branches, it had its own complete and compact being. Besides, it had novelties in its composition. It was the exponent of a new theory of colonization evolved by Edward Gibbon Wakefield. Nature gave the land, and the sale of this was to supply the capital for the introduction of labor necessary to raise the wealth from it which should provide for its future life.

In anticipation of the funds to be thus ultimately acquired from land, a sufficient loan had been authorised by the mother country.

So at its birth, a fresh response was given to the prayer of the great Milton, who, in 1641, "implored that that Divine "Power which had built up the Britannic Empire to a glorious "and enviable height, with all her daughter islands about her, "would stay us in this felicity"; and an additional illustration was started of Penn's theory (1680), who said "that colonies are "the seeds of nations, begun and nourished by the care of wise "and populous countries."

In 1832 there was a great want of employment in England, and a not inconsequent desire amongst all classes for emigration.

In 1833 Coleridge wrote—"Colonization is an imperative duty "on Great Britain. God seems to hold out his fingers to us over "the sea; but it must be a colonization of Hope, not, as has "happened, of Despair."

Under these conditions of public opinion and national requirements was it that authority was sought to establish a new colony in Australia; and, much aided by the great Duke of Wellington, an Act of Parliament was passed in 1834 for the founding of South Australia.

The execution of the Act was placed in the charge of a Board of Commissioners, whose members were Colonel Torrens, F.R.S., chairman; George Fife Angas, Edward Barnard, William Hutt, John George Shaw LeFevre, William Alexander Mackinnon, M.P., Samuel Mills, Jacob Montefiore, George Palmer, and John Wright, Esquires, with George Barnes, Esq., treasurer, and Rowland Hill, Esq. (afterwards Sir Rowland, author of the penny-post system), as secretary.

The Governorship was first offered to but declined by Colonel Charles James Napier (afterwards Sir Charles), the hero of Scinde. The Surveyor-General appointed was Colonel Light, who had served with distinction under the Duke of Wellington in the Peninsular War. To him we owe the admirable selection of the site of Adelaide.

The colony now possesses a territory of 914,730 square miles, or nearly one-third of the so-called continent of Australia. Its northern boundary on the Indian Seas comprises that section of the coast which first made known to the world the existence even of Australia. This occurred in the year 1616, when the Dutch navigator, Zeachen, sighted the shore and called it Diemen's Land, after the then Dutch Governor-General at Java. That was the most northern portion of our present Northern Territory.

The southern boundary of South Australia was the latest discovered of all the shores of Australia. This was the work of Flinders, to whom and at whose request the British Admiralty had given the command of the ship *Investigator* for exploring purposes. This occurred in 1802, shortly after Flinders and Bass had discovered that Tasmania was not a part of the main land of Australia, but an island, severed from the continent by Bass's Straits.

Twenty-eight years after Flinders had mapped our southern coasts, Charles Sturt found the River Murray and followed it down from New South Wales to the junction of the Darling, and into South Australia—or 1,000 miles—to the sea.

Flinders' revelations of the coast in 1802-3, and Sturt's report on the valley of the River Murray in 1831, constituted the evidence upon which, in the same year in London, a few gentlemen discussed the propriety of founding a colony in this part of Australia. In 1834 an Act of the Imperial Parliament authorised the work. In August, 1836, the first survey party arrived under command of Colonel Light, with whom were officers who have survived Colonel

Light and are still with us, namely, the Hon. B. T. Finnis, Mr. Jacobs of Moorooroo, Mr. Lindsay of Encounter Bay. Ships with settlers and immigrants and stores arrived month by month in succession till, on the 28th December of the same year, the first Governor, Captain Hindmarsh, R.N., reached our shores, and, landing the same day at Holdfast Bay, formally took possession of the land in the name of the then British Sovereign, King William IV.

Inland, South Australia is bounded on the west by Western Australia, and on the east by Victoria, New South Wales, and Queensland.

On the present occasion of celebrating the fiftieth year of the colony, it will be appropriate to publish our debt of gratitude to its "fathers and founders." Their work has ended, and they mostly have passed away; we remain and reap the fruits of their labors.

Probably due to the fact that so little was known of the lands of the colony, intending investors were at the first slow to move. Eventual success came through Mr. Geo. Fife Angas establishing the South Australian Company, whose purchases of land satisfied all requirements. Later on, Mr., afterwards Sir James Hurtle Fisher, became Resident Commissioner to the colony.

The Act authorising the founding of the colony defined certain guiding principles. Funds for starting the colony were to come from the sales of the land. Revenue obtained in ordinary ways should pay for its government. The colony was not to be a charge on the mother country. Land was to be sold at a sufficient price, and therefore not under £1 per acre. This principle demanded that settlers should be capitalists able to profitably work the land. Three-fourths of the payments for land were to be invested in bringing our labor, the rest to provide for roads and bridges. Thus three elements of success were to be gained—capital, labor, and means of general traffic.

The settlement of population was to be regulated in groups in order to secure the advantages of neighboring communities. For this end the lands generally were to be surveyed in small blocks, a standard of 80 acres per section being adopted. The sales were to be by public auction, so that the evils of large monopolies might be avoided. Emigration was to be as much as possible by families. In the opinion of the writer these principles of action were well developed, as indeed the occupation of the Adelaide plains under

the first surveys to this day bear witness, in the compact farms and grouped gardens, and frequent townships, and the network of roads, telegraph wires, mails, post and other conveyances, and advantages of concentrated dwellings, which appear on all sides. And so long as care was taken not to offer lands for sale until there was a *bond fide* demand for them, with a fair chance of healthful competition, no monopoly evil could readily have arisen. In those days the land fund was kept separately, and was rigidly devoted to the purposes the Imperial law had assigned to it.

The practice had not till then obtained of looking on the land fund as ordinary revenue; nor would that have been a legal appropriation.

But if it be grateful on this occasion to recall to mind the benefits conferred on us by our "fathers and founders," it is equally incumbent on us not to overlook the long list of sturdy settlers, colonists of all professions and classes, officials, civilians, pastoralists, and farmers, whose intelligence, energy and perseverance, hardy daring and untiring labors, sterling character, and unflinching bravery have effected that great conquest of a savage land, growing meat and wool off hundreds of thousands of square miles recovered from the wilderness, where forests have been reduced to smiling wheatfields—marshes to garden grounds—hills to terraced fruit grounds and vineyards—and who have constructed cities and towns—harbors and highways—railways and metalled roads—telegraph and telephones, to so vast an extent, considering the few years and with a very limited population.

Then need we extend our vision outside the circle of those officially, or as members of trading corporations, or as settlers whose labors have so greatly and beneficially promoted our growth over our life of fifty years, and now thankfully recognise that what of the healthy functioning of our social and political life is subject to, and can be strongly influenced for good or evil by the Imperial agencies acting on and with our national being, the colony has been second to none in the valuable services rendered to it by the Governors who have respectively held the high position of Her Majesty's representatives amongst us.

From the hour of our colony's birth—less the interval of the 174 days between that event on the 28th December, 1836, and the 20th June, 1837—have the benign influences of Queen Victoria's eventful and illustrious reign presided over our Imperial interests. When, on the 20th June, 1837, Her Majesty

ascended the throne, this colony lay in its wildest state of nature. The kangaroo and emu fed over the glades of the Adelaide plains, interspersed amongst the somewhat dense thickets of wattles, shea-oaks, and lofty gumtrees. Here peace and silence were undisturbed except by the hunting aborigines, whose "coo-ees" in the daytime were heard from the hills, and the doleful cries of howling dingoes at night. Beyond the erection of a few tents or reedy breakwinds, and of wooden ready-made houses brought with them by the colonists from London, and of a few felled trees for firewood and other immediate wants, or for the surveyors' labors; and beyond the anchoring of a ship off the coast, and the haulage of goods to and on shore, no impress of a civilised occupation yet marked the founding of a colony. Fifty years of life have passed, and the colony is what we this day see it, and what the subjoined statistics declare it to be. Fifty years of our life have passed under the reign of Her gracious Majesty Queen Victoria—Queen of Great Britain and Ireland, Empress of India and the Colonies—whom God yet long preserve!—and whose Jubilee sovereignty we now blend with our own.

Comparative Statistics for the last Fifty Years.

1836.		
Population		546
1846.		
Population		25,893
Imports		£330,099
Exports		£312,838
1856.		
Population		104,708
Imports		£1,366,529
Exports		£1,665,740
1866.		
Population		163,452
Imports		£2,835,142
Exports		£2,858,737
Banking Deposits		£1,401,565
1876.		
Population		225,677
Imports		£4,576,183
Exports		£4,816,170
Banking Deposits		£3,316,095
1886.		
Population		312,439
Imports		£4,852,750
Exports		£4,489,008
Banking Deposits		£4,962,065

FORM OF GOVERNMENT.

The colony has responsible Government, in which the Sovereign is represented by a Governor appointed by the Crown, who has a power of veto in certain cases, in accordance with the first Constitution Act.

The Parliament consists of two Houses, the Legislative Council and the House of Assembly, who are invested with plenary powers in all matters affecting South Australia.

The twenty-four members of the Legislative Council are elected for a term of nine years, one-third of whom retire every three years, unless in the event of a Bill for any Act having been passed by the House of Assembly during two previous sessions, the second and third readings of such Bill having been passed by an absolute majority of the House of Assembly, and a general election having taken place in the meantime, then, if such Bills are rejected by, or fail by reason of amendments proposed by, the Legislative Council to become law, the Governor has the power to dissolve Parliament, and thereupon members shall be selected to supply the vacancies, for which old members are eligible.

Voters for the Legislative Council must be British subjects, twenty-one years of age, and on the electoral roll for six months, and possess a freehold of the value of fifty pounds, or a leasehold of twenty pounds annual value having three years to run, or with right of purchase, or occupy a dwelling-house of twenty-five pounds annual value.

The House of Assembly is composed of fifty-two members, representing twenty-six districts, who are elected for three years, unless in the meantime a dissolution is effected and a change of Ministry occur.

Elections are by ballot, the voting taking place between 8 a.m. and 6 p.m. All voters must be British subjects, twenty-one years of age, and on the electoral roll for six months.

The Cabinet consists of six members, as follows :—

1. The Chief Secretary.
2. Attorney-General.
3. The Treasurer.
4. Commissioner of Crown Lands.
5. Commissioner of Public Works.
6. Minister of Education.

ADMINISTRATION OF JUSTICE.

Supreme Court.

Criminal.—The Criminal Law of South Australia is very similar to that of the mother country, being based, for the most part, on the English Criminal Consolidation Acts passed a few years ago. There is no grand jury in South Australia, accused persons being placed upon their trial upon information laid by the Attorney-General. The Criminal Court, presided over by the Chief Justice or one of the Puisne Judges, sits every alternate month in Adelaide. Circuit Courts (in which civil as well as criminal cases are tried) are held in the Northern Districts three times, and in the South-Eastern Districts twice, a year. By a recent change in the law, the accused, and the husband or wife of the accused, may give evidence on oath, submitting, in such case, like other witnesses, to cross-examination.

Civil.—Civil Sittings, presided over by the Chief Justice or one of the other two Judges, are held in Adelaide six times in the year. Civil cases are tried in the most important of the distant country districts at the Circuit Courts. The English Judicature Act has been accepted, with slight variations.

Appeal.—An appeal lies from the Supreme Court to the Local Court of Appeals, consisting of the Governor of the province, and the members of the Executive Council, with the exception of the Attorney-General. Where the matter in dispute amounts in value to £500 there is also an appeal, either from the Local Court of Appeals, or direct from the Supreme Court, to the Judicial Committee of the Privy Council.

Local Courts.

These Courts, resembling in their constitution in many respects the County Courts of England, are established throughout the colony. They have cognizance of all personal actions where the damage claimed does not amount to more than £490, and they have jurisdiction to any amount, with the consent of the parties. They have also jurisdiction to try actions for ejectment where the value of the land does not exceed £400, also in actions for the recovery of small tenements. Causes in which the claim exceeds

£20 are, tried before a Judge of the Supreme Court, with or without a jury, or before a Special Magistrate and two Justices of the Peace, or before a Special Magistrate and a jury. These Courts have power to apply equitable principles in their administration of the law.

Insolvency.

There is a Court of Insolvency at Adelaide, presided over by a Commissioner of Insolvency, who may or may not be the Special Magistrate presiding over the Local Court. By a recent enactment power is given to Special Magistrates of such Local Courts as may be proclaimed for that purpose to act as Commissioners in Insolvency.

Vice Admiralty Court.

There is a Vice Admiralty Court in Adelaide, the Judge of which is the Chief Justice, having jurisdiction analagous to that of the English Court of Admiralty.

Probate and Administration.

The law relating to wills is the same in South Australia as in England, and the law and practice regulating the granting of probate are almost precisely similar. With respect to intestacies, however, the law is different from that of England. Primogeniture has been abolished, and the real estate of intestates, not being married women, is distributable on the principle applicable to personalty in such cases; and the law as to the distribution of the real estate of married women dying intestate is assimilated, *mutatis mutandis*, to that regulating the distribution of the real estate of married men dying intestate.

Matrimonial.

In South Australia, by what is known as the "Deceased Wife's Sister Act," a man is allowed to marry his deceased wife's sister, or the daughter of his deceased wife's sister.

Magistrates' Courts.

These Courts are established throughout the country, for dealing with minor offences, and matters with respect to which they have jurisdiction under the Police, Municipal Corporations, and other Acts.

THE ABORIGINES.

The aboriginal population of South Australia, at the foundation of the colony in 1836, was estimated at 12,000.

At the date of the last official census, 1881, a considerable decrease appears to have taken place in their number, which is given as—male, 3,198; females, 2,430; total, 5,628, exclusive of 718 in the Northern Territory. Of these the adults healthy were 3,777; sick and infirm, 959; children, 892.

A large proportion of the 959 sick and infirm appears among the natives inhabiting the country north and east of Lake Eyre, where disease, chiefly syphilis, is very prevalent, even among the young children.

The aborigines of the Cooper's Creek country appear to be more numerous and healthy, probably owing to their hunting grounds being better supplied with food and water, the sick and infirm being only 118 out of a total of 2,182.

During the years 1881-6 there have been recorded 324 births and 417 deaths, decrease during the five years 93.

The disparity in the number of the sexes, the small proportion of children to the total population, and the prevalence of disease, to which the natives appear more susceptible since the advent of Europeans, show that the gradual diminution in their numbers can easily be accounted for.

The protection of the aborigines is provided for by the State. A special department watches over their welfare and interests, consisting of a protector, who has the disbursement of the annual vote, £5,104, and the control and supervision (assisted by a sub-protector in the Far North), of the depots (about fifty in number), for the distribution of rations, clothing, and medical comforts.

It is believed that the establishment of these depots in suitable localities, and the judicious distribution of rations, &c., tends to promote friendly relations between the settlers and the aborigines.

With a view to ameliorate the condition of the natives by industrial pursuit, as well as moral and religious training, and thus render their labor more useful and profitable to themselves, five (5) special reserves have been set apart in the following localities,

containing a total of about 670,000 acres, viz. :—Point McLeay, on Lake Alexandrina; Poonindie, near Port Lincoln; Point Pierce, on Yorke Peninsula; Kopperamanna, near Lake Hope, Far North; Hermansburgh, on the Finke river, Central Australia; where missionary institutions have existed for several years past, mainly supported by voluntary contributions, and the proceeds of produce raised by native labor from land, stock, &c. About 500 aborigines are instructed, cared for, and usefully employed, including about 120 children, who are fed, clothed, and educated at the mission schools.

The financial returns from these institutions for the year 1886 show :—

	£	s.	d.
Total voluntary contributions received	1,248	13	7
“ amount proceeds of produce raised	5,281	12	10
“ “ wages paid to aborigines	1,833	15	7
“ estimated value of all stock, produce, buildings, &c., on the stations	35,840	6	10

As an illustration of the civilising agencies at work in these institutions, and their results in introducing a new and cheering phase of life amongst the aborigines, the following extracts are given from the report of a recent visitor to the Point McLeay Mission Station :—

“The view of the settlement is very pretty. The cottages* of the natives with their white walls are situated near the shore of the lake, at stated distances, in a line for about a quarter of a mile from the left of the jetty path, the line being broken by the overseer’s house, workshops, and stables. The chapel, superintendent’s house, reading-room, schoolroom, kitchen, and schoolmaster’s house are seen in another line to the right. Here, nearly thirty years ago, the Rev. Geo. Taplin camped among savages, and, cut off from the nearest settlement by fifteen miles of water, made a home among them, mastered their language, conquered their superstitions, and, in the establishment of the present mission station, made many converts to christianity and civilisation.

“The purity of the English spoken on the station caused us some astonishment. No ‘pigeon’ English is made use of there; in fact the natives, young and old, connected with the mission, express themselves more clearly than the generality of Europeans.

“We were shown over the schoolroom and found 43 children in attendance including two or three of the station officers’ children.

“The highest number of marks recorded on the examination sheet was 117, obtained by the son of the superintendent; two native boys stood next with 114 and 113 marks respectively. Mr. Hutley, the schoolmaster, informed us that, except in arithmetic, many of the native children would pass the standard adopted in ordinary Government schools.

“We visited several of the cottages, finding them in most instances clean and comfortable. In one we noticed a sewing-machine, framed pictures on the walls, sideboard, and antimacassars on the chairs; in another a harmonium. All these articles were procured at the expense of the occupants. There were in all eighteen of these cottages, accommodating, at the time of our visit, about seventy natives, including women and children. Several of these buildings are named after those who paid for their erection. For the information of others who may be inclined to follow their good example, it may be stated that each cottage cost £16; and there are about forty-five natives living in wurleys near the station, many of whom would be glad to occupy cottages if there was accommodation for them. Think of this ye dwellers in comfortable houses, erected on lands which you and your fathers took from them. Think of the miserable shelter afforded during the winter months by these wurleys on the cold and bleak shores of the lakes. Think of the sickness engendered thereby. Then let your pocket buttons cease to do duty, and allow you to supply what would be a real boon to the few remaining original owners of the land of your adoption.

“The men engaged on the station are paid at the rate of 12s. per week. The most remunerative work to the mission is wool washing, and Mr. Taplin wishes they could command more of this particular work than they have at present; and if the station could obtain more of the wool for washing that is annually conveyed past the station to Port Victor for ocean shipment, it would not only command higher prices in the home markets, but add considerably to the mission revenue.

“Comparatively few Adelaideans are conversant with the work carried on at this undenominational institution. Pound, shilling, and pence men of the world may ask, what is the use of taking so much trouble on behalf of the aborigines? What is the use of teaching the children as they are taught there? Is it not overdone? My answer to such is, visit the station and see for yourselves; go to the wurleys and observe the condition of the old

“ natives, whose inborn superstitions will perhaps ever prevent
“ them leading any other life than that of their joint occupants of
“ the wurleys, the dogs. Then go across to the mission cottages,
“ listen to the merry happy laughter of the children at play, after
“ school hours ; look at their bright intelligent faces ; mark the com-
“ fort and cleanliness of the occupants of the cottages ; and if it
“ be evening, see them reading the weekly newspaper to which
“ they individually subscribe. Visit the reading-room after work-
“ ing hours, and note the books and illustrated papers being
“ perused ; visit the chapel and watch the behaviour of the native
“ worshippers, and then if you have a heart you will come away as
“ we did, thanking God that there is such an association having
“ for its title, that of the ‘Aborigines’ Friends.’ ”

OCCUPATION AND DISPOSAL OF LAND.

The survey of land in South Australia was commenced upon the arrival of Colonel Light and his party in the ship *Rapid*, towards the end of 1836.

The site of the city having been decided upon, together with a site for a port, the survey of town acres was proceeded with; also a line for a canal connecting the two places, it being part of Colonel Light's design to have vessels ultimately brought into the city.

The first land was sold in March, 1837, at auction, when, out of the 1,042 acre blocks contained by both North and South Adelaide 562 were sold for cash, whilst 437 others were either selected, or set apart for holders of preliminary land orders which had been purchased in London, entitling the holder, for the sum of £80, to become possessed of one town acre, and one country section containing 134 acres.

Most of the original grants of town acres bear the date 23rd December, 1837, showing that holders of orders had not long to wait before being placed in possession of a part of their property; but, owing to delays in survey matters, caused by lack of transport for camp equipage, and by disputes between those highest in authority, the first country sections were not ready for selection until May of 1838.

Colonel Light resigned in July following, and Mr., afterwards Sir George Kingston, then Deputy Surveyor-General, occupied his position until October, when he also resigned. Mr. Ormsby had charge of the department until March, 1839, when Captain Sturt was appointed Surveyor-General, but shortly after accepted another office; and Captain Frome, R.E., was gazetted Surveyor-General on October 2nd, 1839.

Colonel Light died on October 21st, 1839, and was buried in the public square bearing his name.

A map accompanying the third annual report of the Colonisation Commission ordered by the House of Commons on the 13th May, 1839, to be printed, shows the progress of the survey at that time; it gives also the names of selectors, with the sections taken up.

The early settlers appear to have dispersed themselves from the city as a centre, to localities where the soil offered the best inducements for agricultural pursuits; and, as a consequence, surveys had to be made upon short notice, in many places wide apart. Districts were marked upon maps as A, B, C, D, E, F, but these soon gave place to the more convenient divisions of counties and hundreds. On June 2nd, 1842, the following nine counties were proclaimed in the *Government Gazette*: Adelaide, Hindmarsh, Flinders, Light, Gawler, Sturt, Eyre, Stanley, Russell, the names given to them being commemorative of men intimately associated with the early history of the colony. In like manner, it has been an invariable rule up to the present time to perpetuate the names of governors and acting governors by naming a county after each one soon after His Excellency's arrival in the province, and of South Australian notable men by naming hundreds after them.

Colonel Gawler brought with him authority to combine with the office of Governor that of "Resident Commissioner for the sale of Crown Lands," a position previously held by Mr., afterwards Sir James Hurtle Fisher.

In this capacity the Governor gave instructions direct to the Surveyor-General, and conducted a good deal of correspondence with the public upon matters connected with the occupation of Crown lands. Each Governor in succession exercised this power until constitutional government was granted to South Australia; since which time Governors have had directly but little to do with such matters, beyond formally placing their signatures to various grants and leases issued by the Crown.

During 1839, 179,841 acres were sold, and in 1840 and 1841 the survey was effected of thirty-five special surveys, consisting of 4,000 acres each, in various localities outside the districts referred to. Colonel Frome and his surveyors were assisted in this by a strong party of sappers and miners.

An important feature associated with these surveys was the triangulation commenced by Colonel Light upon the Adelaide plains, and extended by his successors for the purpose of mapping the country, and connecting the detail surveys of sections, until, by the end of 1842, it embraced a strip of country stretching from Cape Jervis and the Murray mouth as far north as Mount Bryan and Mount Remarkable.

Mr. Eyre's walking tour along the south coast, his explorations

westward from the Burra to Crystal Brook, the discovery, northward, of the lake that bears his name, his journey from Port Augusta to Port Lincoln, and across to Western Australia, are memorable circumstances which stand connected with the survey department, and the opening of the interior for pastoral pursuits.

In July, 1846, two new counties were proclaimed in the south-east, named respectively Grey and Robe; and by February, 1847, more than a dozen isolated sections were sold in them. The now historical boundary line between this province and Victoria was at this date being defined by the Imperial Government. Mr. Wade and his assistant, Mr. White, however, relinquished their work towards the end of the year at the 123rd mile. It was resumed by others about four years later, and again abandoned on account of the difficulty of the work; so that not until 1857 was the line completed as far as the River Murray. Colonel Frome held office until February, 1849; and in the following July, Major, since General Sir Arthur H. Freeling, K.C.B., arrived in the colony to succeed him.

In 1851, a road was surveyed from Wellington to the Victorian goldfields. Land continued to be surveyed when and where it was needed. Year after year auction sales were regularly held. The trigonometrical survey was from time to time extended further north, north-east, and west; and, on January 9th, 1861, Mr. G. W. Goyder was gazetted Surveyor-General.

SURVEY DEPARTMENT.

The Survey and Land Offices have for many years occupied the south-eastern portion of what are now called the old Government buildings, at the corner of King William and Flinders streets.

In addition to the head of the department, the staff consists of surveyors, who, with the requisite number of assistants, are exclusively engaged upon the sectional and road survey of lands intended for settlement; a drawing staff; public land office auction branch; photo-lithographic, and assaying divisions.

The Deputy Surveyor-General undertakes the field duties, directing the surveyors as to roads, reserves, sites of towns, suburban and country sections.

The Chief Draughtsman superintends the examination of field diagrams, preparation of land office and other plans, and the issue of data of all kinds connected with survey diagrams and office plans.

The Chief Clerk of the Land Office conducts the duties of that branch, including the exhibition of plans, sale and leasing of town, suburban, country, agricultural, pastoral, and mineral lands; issue of gold leases, control of district council and parliamentary plans deposited, and affords general information to the public upon all subjects connected with the disposal of land.

The Photo-lithographer photo-lithographs plans required by the public, parliament, and for government purposes. The chief clerk conducts the general correspondence; beside which is a Receiver of Revenue and an accountant, the monetary transactions being extensive.

Goldfields are under control of senior and junior wardens; Crown lands are supervised by rangers; and vermin destruction parties by an inspector; all of whom are directed by, and report to, the Surveyor-General.

In connection with the department is a chemical analyst, who assays ores, metals, earths, rocks, water, bark, etc., that are discovered and submitted to him, a small charge being made for analyses of specimens from private lands; those from Crown lands are free.

*Occupation of Land.**(For pastoral purposes.)*

Leases of unoccupied Crown lands may be obtained upon application to the Surveyor-General by letter, describing locality, and area required. Lands so applied for are gazetted, and leases offered for sale at auction, the term being thirty-five years, at an upset price of not less than two shillings and sixpence per square mile per annum. The amount bid at auction is the rent payable for fourteen years in succession, after which the rent is fixed by valuation every seven years. The land must be stocked before the end of the third year with five head of sheep, or one head of great cattle, or improvements effected thereon to the value of thirty shillings, per square mile.

Leases now Held.

Leases now held, expiring by effluxion of time, will be offered for a term of twenty-one years, in blocks recommended by the Pastoral Board, and approved by the Commissioner of Crown Lands; in addition to which a deposit of ten per cent. is required to be paid on the value of improvements then on the land, which deposit will be held as security for the maintenance of improvements in efficient repair; five per cent. upon such improvements being allowed to the purchaser against the rent when due. The upset price of leases of this class remaining unsold after auction, may be reduced, and the lease be again offered at a price not less than five shillings per square mile per annum.

Annual Leases.

Land that has been resumed from pastoral occupation for agricultural purposes, and is not required in connection therewith, may, if not applied for by the former lessee, who has the right of occupation upon terms similar to those of his original lease, be offered at auction on lease for one year, with right of renewal from time to time for seven years.

Shape and Marking Out of Pastoral Blocks.

As a rule pastoral lands are granted in rectangular form, and connected with a trigonometrical station, or conspicuous natural feature as a starting point. The boundaries are defined by licensed surveyors at the expense of the lessee.

Land Occupied for Agricultural Purposes.

Agricultural lands are surveyed and marked on the ground prior to sale, in sections not exceeding five hundred acres. Plans are prepared, and the land advertised in the *Government Gazette* from four to six weeks prior to date of offer. Auctions are held in the land office, which is open daily to the public from 10 till 3 (exclusive of luncheon time, from 1 to 2), and from 10 till 12 on Saturdays; where all information on this subject can be obtained.

Cash Sales.

Town and suburban lands are sold at auction for cash; terms, twenty per cent. of purchase-money payable at fall of hammer, and balance within one month. Also, country lands that have been open for selection for a period of two years may be offered at auction for cash; and any that remains open after being so offered, may be purchased by private contract at the upset price. Special lots of country lands may be purchased at auction for manufacturing purposes, not exceeding one hundred acres in extent in any one block.

Selections on Credit.

Credit selections comprise one or more sections of land in blocks up to one thousand acres, taken up under agreement, on terms varying according to circumstances. They may be taken up at auction in the first instance, or by private contract when they have passed the hammer. They are held under condition of either personal or substituted residence, under obligation to fence, cultivate, plant, and to erect substantial improvements up to a certain value during each year; the terms of payment being ten per cent. of the purchase-money at time of selection, ten per cent. three years later, and the balance in sixteen equal yearly instalments. The purchaser may, however, obtain his title at the expiry of ten years, by paying what is then due. Personal residents have prior rights to those applying under substituted residence conditions.

Leases with Right of Purchase.

Leases of scrub lands offered at an annual rent of not less than ten shillings per square mile can be purchased by personal residents at auction—or by private contract if the land has passed—in blocks

not exceeding 3,200 acres, for a term of twenty-one years, at an upset price of one pound per acre; the purchase-money to be divided, and paid in twenty-one equal yearly payments; and the purchaser to clear the scrub from a fortieth portion of the land every year, until half the entire area is available for cultivation. A lessee, having complied with the conditions of his lease, may complete the purchase at any time during the last ten years of his term. Scrub lands that have been offered at auction, and have remained open for three months, may be let at the upset price, with right of purchase at one pound per acre, and with similar conditions as to clearing, etc., but the rent forms no part of the purchase-money, nor is residence compulsory.

Miscellaneous Leases.

Lands are let under miscellaneous lease for the purpose of trade and manufactures, also for pastoral and cultivation purposes, for a term not exceeding twenty-one years, on conditions specified at time of sale. The area that may be thus taken up is practically unlimited.

Grazing and Cultivation Lands.

Lands for grazing and cultivation may be let at a rental of not less than one half-penny per acre, written application being made to the Commissioner, by whom they are referred to a Land Board for decision. The leases are for a term of twenty-one years, and require the lessees to reside upon the land. No person can hold more than one block, nor can a block contain a larger area than 20,000 acres.

Leases of land in the south-eastern portion of the province, comprised within the limits of Schedule B of the Act, are offered at auction at an upset price fixed according to the quality of the land, for a term of fourteen years, with a right of renewal for a further term of fourteen years. The conditions require residence upon the land and that the boundaries of the block be fenced within two years from the date of lease. These lands, if passed at auction, may be obtained by private contract under similar conditions.

Leases of Small Blocks for Working Men.

Working men's homestead blocks not exceeding twenty acres, and situated in various localities, may be leased at auction, at an upset price of sixpence an acre, or by private contract, after

having been so offered, for a term of twenty-one years, with right of renewal for a further term of twenty-one years, and with right of purchase, at a price to be fixed by valuation, at the expiration of the first term, or at any time during the currency of the renewed term. Residence during nine months of the year being indispensable.

Mineral Licences.

Licences to mine for any minerals or metals except gold, may be obtained upon application at the Land Office, or by letter to the Surveyor-General, upon payment of one pound, which entitles the holder to search for twelve months over an area not exceeding eighty acres, and to remove one ton, or by permission of the Commissioner of Crown Lands, twenty tons of mineral other than gold for assay or analysis; also to a lease of the land when a survey of the same has been approved.

Mineral Leases.

Mineral leases not exceeding eighty acres are granted for a term of ninety-nine years, at a rental of one shilling per acre, with a royalty of $2\frac{1}{2}$ per cent. on net profits accruing.

Miners' Rights.

Miners' rights, entitling the holder to search for gold on any Crown lands for one year, are issued on receipt of fee of five shillings.

Gold Leases.

Gold leases, not exceeding twenty acres in area, are granted for a term of twenty-one years, with right of renewal for a further term of twenty-one years, at a yearly rental of ten shillings per acre, under conditions specified by regulations, and in the lease.

Miscellaneous.

Licences are granted to cut, manufacture, and remove stone, timber, salt, guano, manure, seaweed, sand, loam, etc., and for the erection of buildings for manufacturing or other purposes; also for depasturing stock on Crown land, on application at the Land Office.

The following table shows the area of the province, with its various subdivisions, sold, leased, and occupied lands:—

(Exclusive of the Northern Territory.)

	Acres.	Square Miles.
Area of province	243,244,800 =	380,070
Number of counties, 371.....containing	39,301,120 =	61,408
Number of hundreds, 298	21,402,560 =	33,441
Area of land occupied for pastoral purposes.....	123,705,600 =	193,290
Area of land alienated.....	9,465,182 =	14,789
Area of land held under miscellaneous, mineral, and gold leases	2,355,023 =	3,680
Area of land granted for Education and University	370,000 =	578

(Including the Northern Territory.)

Area of South Australia	578,361,600 =	903,690
Area of land alienated	9,947,552 =	15,543
Area of land occupied for pastoral purposes	291,464,960 =	455,414
Area of land held under miscellaneous, mineral, and gold leases in Northern Territory }	26,560 =	41½

THE REAL PROPERTY ACT.

A brief notice of the Real Property Act and its author must not be omitted.

The late Sir Robert Richard Torrens, the author of, and first Registrar-General under, the Real Property Act, was born at Cork in 1814, and educated at Trinity College, Dublin. Sir R. R. (then Mr.) Torrens arrived in South Australia in the early days of the colony, and for some years held the office of Collector of Customs; and it was during that time it occurred to him that the law relating to shipping could be applied to land. He then resolved that should opportunity offer, he would undertake the task of reform in the laws relating to the transfer and encumbrance of freehold and other interests in land. Subsequent appointment to the office of Registrar-General afforded the opportunity, the result, after long labor and anxious thought, being the passing, in 1858, of the first Real Property Act.

Registration of title is the principle of the Act, taking the place of the old deed system, which was very costly, and requiring legal assistance in any transaction. Under the Torrens Act (as it is commonly called) any person of ordinary intelligence can transact his own business without legal aid.

Judge Gorrie, of Fiji, in a paper relating to the registration of title, ordered by the House of Commons to be printed August 15th, 1881, remarks—"I do not hesitate to say that the South Australian "system reduces conveyancing to the simplest possible conditions." Not only is the system simple, but the cost of registration is small.

The number of transactions under the Act now exceed 301,000, exclusive of Certificates of Title and Land Grants, which number 123,900.

The Torrens system is now in force in New South Wales, Victoria, Western Australia, Tasmania, New Zealand, and Fiji, and will probably shortly be introduced into Canada.

THE EXPERIMENTAL FARM AND AGRICULTURAL COLLEGE, ROSEWORTHY.

In order to bring about an improvement in the modes of agriculture pursued in the colony, the Parliament, in October, 1879, passed the following resolution :--

“That, in the opinion of this House, it is desirable steps should be taken to establish a School of Agriculture ; and also, as a necessary appendage thereto, and within a convenient distance from the city, an Experimental Farm ; and to appoint an experienced and skilful Professor of Agriculture for the purpose of encouraging a more rational mode of farming than at present obtains in South Australia.”

To secure the services of a thoroughly competent, practical, and scientific agriculturalist, the Parliament voted the liberal salary of £800 per annum, and the Agent-General for the colony in London was entrusted with the duty of selecting a gentleman possessed of the necessary qualifications.

Applications for the office were invited in the leading English journals, and, after consulting those best qualified to give advice in the matter, the Agent-General selected Professor J. D. Custance, formerly Professor of Agriculture at the Royal Agricultural College, Cirencester, and afterwards Professor of Agriculture to the Imperial Government of Japan, to fill the office. Professor Custance arrived in the colony in July, 1881, and was shortly afterwards authorised to procure offers of sites suitable for the purpose required. Eventually a farm containing 828 acres, situated near Roseworthy, a distance of thirty-one miles from Adelaide, was secured at a cost of £4,518.

In order to afford young men who desired to devote themselves to agricultural pursuits a course of instruction in agriculture and subjects connected therewith, the Parliament in 1881 approved of the erection of a college capable of accommodating forty students. The college, which was erected at a cost of £9,121 (including fittings and furniture), and of which Professor Custance was appointed principal, was opened on February 3rd, 1885. The

course of instruction included practical agriculture, chemistry, botany, geology, surveying, levelling, mensuration, bookkeeping, entomology, and veterinary.

In December, 1886, ten students who had completed their two years' course obtained their diplomas ; sixteen are attending at the present time.

Farmers, in common with others, have felt the pressure of a succession of bad seasons, and have in consequence, notwithstanding the moderate fee charged—£50 per annum—been unable to afford their sons the benefits which the college holds out to them. It is hoped, however, that with a return of more favorable seasons the capacity of the college will be fully tested. Although the building as at present constructed presents a finished appearance, the original design provided for an additional wing, and such will doubtless be added when it is required.

It is impossible to estimate the extent to which the agricultural industry of the colony has been benefited by the experiments already conducted on the farm and the teaching imparted in the college ; but there is reason to believe that in some parts of the colony, at least, a very marked improvement has taken place on the systems of farming hitherto pursued—that agriculturists have experienced the advantage of deep cultivation and a rotation of crops, as compared with the practice of ploughing the same land year after year to a depth of only three or four inches and sowing the same kind of grain. Reforms of all kinds are proverbially of slow growth, and in no department of human activity more so than in agriculture.

The Roseworthy Experimental Farm is composed of inferior land, and has a rainfall considerably less than many other parts of the province, but, notwithstanding these serious disadvantages, the yield of wheat per acre has, so Professor Custance has stated, been three times as great as the average of the whole colony—a fact which speaks volumes in favor of scientific agriculture, and which farmers would do well to lay to heart.

By "The Agricultural College Endowment Act, 1886," provision is made for setting apart 50,000 acres of Crown lands for the support of the college.

STOCK.

Fifty years since a few merino sheep were landed in the colony from Germany, and from time to time small shipments were made from Tasmania. From this source commenced the rise and establishment of the valuable South Australian merino flocks. Sheep were also introduced from New South Wales and Victoria, or Port Phillip, as it was then called.

As early as 1838, there were already 28,000 sheep, with an export of wool of no great value; but in five years from the commencement, notwithstanding the struggles and hardships of our pioneers, over 250,000 sheep are recorded, with an export value of wool amounting to the moderate sum of £35,800.

Enterprising colonists pushed out into the wild bush with their flocks, braving unknown dangers, and attacks of hostile natives, and forming stations, and finding valuable pastures for their sheep and cattle, until, on the completion of the twenty-first year of the foundation of the colony, the sheep numbered 2,000,000, and the value of the wool exported amounted to over £500,000. Since that time vast strides have been made in the production of wool, and in the number and quality of the sheep, so that in the fiftieth year in the history of the colony, the sheep number nearly 7,000,000, and the export of wool is equal to about £2,000,000.

Large numbers of valuable stud sheep are exported annually to New South Wales, Queensland, and Western Australia. The South Australian merino is noted for the size of the carcase, and for the great weight of fleece, long staple, and uniform character, returning a high average value per sheep. The climate and pastures are particularly suited for the raising of sound, large-framed animals, which are remarkably free from many diseases to which sheep are subject. Scab, which is prevalent and costly in America and in European countries, has been unknown in the colony for over sixteen years.

But few importations of horses and horned cattle occurred in the early days by sea; but large droves of cattle were soon brought overland, commencing in 1837, at great risk of attacks from the natives. Messrs. Hawdon and Charles Bonney were the pioneers

who brought over the first drove of cattle from New South Wales down the River Murray, arriving in 1838; followed in a few weeks by Mr. E. J. Eyre. In the year 1839, Mr. C. Bonney brought the first drove of cattle from Port Phillip through the then unknown country in our south-eastern district. Numerous other droves followed these, and cattle stations were formed in outlying country; in many instances it being found advisable to first stock country with cattle. The greater and more certain returns, however, which were obtained from sheep, had the effect of preventing the herds from increasing in so great a proportion as had been the case with the sheep. Horse stations were also established, but generally in conjunction with cattle; and at the present time there are about 400,000 horned cattle, and 170,000 horses in the colony.

Our colonists, not sparing expense, imported valuable pure-bred cattle, and thoroughbred and draught horses, from the most valuable herds and studs of Great Britain; and there are now in the colony descendants of some of the best strains of shorthorn and Hereford cattle. The horse stock has been enriched by selections from the best blood of England; and a visit to one establishment alone, at Morphettville, in the neighborhood of Adelaide, will gratify the most ardent admirer of the horse.

The climate is admirably adapted for producing and rearing the best description of horses, cattle, and sheep, with less trouble and expense, perhaps, than in any other part of the world.

There are still large tracts of country in the interior, on which horses, cattle, and sheep will thrive, and in a few years more, with the improved means available for obtaining water, and the certain communication from the extension of railways, it may fairly be anticipated that the flocks and herds will be doubled in number.

Whilst the country has been suffering from bad seasons and depression in business, the value of exports in connection with stock for the year 1886 was, horses, cattle, and sheep, £144,735; skins, hides, and tallow, £126,831; and 44,792,613lbs of wool, were exported, the whole showing a very large export trade for one interest only in the Colony.

THE WOODS AND FORESTS DEPARTMENT.

Of late years, from various causes incidental to their rise and prosperity, the colonies of Australasia have awakened to the necessity for the proper conservation of their natural forests and the planting of woodlands on the otherwise unwooded portions of the respective provinces, in order to the permanent good and well-being of the country. Victoria and New Zealand have each given birth to Acts of Parliament on the subject; but these are now only being properly carried out. Queensland and New South Wales are agitating the matter; but it remained for South Australia to have the honor of being the first Australian colony to establish a system of forestry in her midst.

The originator of the scheme was Mr. Krichauff, M.P., who, in the session of 1871, called for a return eliciting information from persons resident in the different districts of the colony in regard to the supply, preservation, and culture of forests. The answers were summarised and prepared by Dr. Schomburgk, the Director of the Botanic Gardens.

Subsequent to this return Mr. Krichauff introduced, and successfully passed in the House of Assembly, in 1873, "An Act to Encourage the Planting of Forest Trees," which provided for the payment by Government of two pounds per acre for every acre planted by a landowner in certain districts of the colony, according to certain defined conditions.

During the same session a "Report on Forest Reserves" was laid on the table of the House, which had been prepared for the Honorable the Commissioner of Crown Lands by G. W. Goyder, Esq., the Surveyor-General. This report made suggestions for the proclamation of certain portions of the country as Forests reserves, and dealt exhaustively with recommendations regarding the formation of a Department of Forests.

In 1875, a Bill was brought in by Mr. Krichauff and passed, intituled "An Act to make provision for the appointment of a Forest Board, and for other purposes." In this Act certain districts pointed out by Mr. Goyder were defined as Forests reserves.

During the session of 1876 a short Act was passed to amend certain portions of the Forest Board Act.

In 1878 "The Forest Trees Act" was brought before the House of Parliament and became law during that session. This Act consolidated and amended all the laws then existing in the colony

relating to Forest Conservancy, and embraced the different matters provided for in all the previous Acts relating to the subject.

The members of the then Forest Board consisted of G. W. Goyder, Esq., Surveyor-General (Chairman), the late Colonel Barber, the Hon. B. T. Finnis, the late Geo. McEwin, Esq., J.P., and Dr. Schomburgk, Director of the Adelaide Botanic Gardens.

The first Conservator of Forests appointed by the Board was William Murray, Esq., of Glen Osmond, but he resigned his position after having been one year in office.

The services of J. Ednie Brown, J.P., F.L.S., of Edinburgh, Scotland, were then secured. Mr. Brown arrived in the colony in September of 1878, and since then has held the position of Conservator of Forests in the colony.

In the year 1882 the members of the Forest Board resigned their positions, and as the Government of the time thought the interests of Forest Conservancy in the colony could be better carried out under a department with the Conservator of Forests directly responsible to the Commissioner of Crown Lands, a Bill to give effect to this was brought before Parliament and passed. This is called "The Woods and Forests Act of 1882." By this Act the Forest Board was abolished, and all powers and privileges of that body were vested in the Commissioner of Crown Lands, who in the Act is designated the Commissioner of Forest Lands.

This Act is divided into six parts, relating to the following matters :—

Part I. Repeal of previous Act.

Part II. Powers of Commissioner of Forest Lands.

Part III. Re-declaration of Forest Reserves.

Part IV. Provisions for encouraging the planting of Forest Trees by private enterprise.

Part V. Conditions under which Forest Reserves may be leased.

Part VI. General Provisions, Penalties, and Legal Procedure.

There are five schedules attached to the Act, viz. :—(1) List of Forest Reserves and defining their boundaries. (2) List of Forest Districts in which trees may be planted with the object of securing the Bonus under the "Encouragement of Tree Planting" clause. (3) Regulations under which the Bonus of £2 per acre for planting will be granted. (4) Form of Bonus order. (5) Form of Mineral Certificate.

The Act has now been in force for five years, and has been found to work admirably in every respect.

As a suitable adjunct to the clause in the Act for the encouragement of planting on private property, Mr. Brown, in 1881, published through the Government Printer, "A Practical Treatise on Tree Culture in South Australia." This work deals with the subject of planting and forest management in all its forms. It is freely illustrated, and up to date over 2,500 copies have been distributed free of charge. The work is now in its third edition, and has been in considerable request by planters in all the Australasian colonies.

During the last five years the Government has each year placed the sum of £300 at the disposal of the Conservator for the purpose of raising trees at the several State nurseries for free distribution to landowners in the colony. In connection with this distribution, an annual catalogue is issued detailing the kinds and number of trees available under the vote, the soils and situations suitable for each kind, the conditions under which the trees are given away, some general instructions in regard to tree planting, and other matters of interest to planters. Over 800 copies of this catalogue are annually applied for. About 260,000 plants are distributed each year in this way. At the end of each season, circular letters are sent to the recipients of the trees asking for a report as to the number alive and the general result. From these reports it is shown that over 800,000 trees are alive and doing well of the number given away. Up to date there have been five applications for the bonus of £2 per acre, given under the clause for the encouragement of tree planting; and it is known that many more will avail themselves of the concession during the next few years. Altogether the encouragement given to tree planting by the Government in this colony has been most satisfactory.

In 1885 the Conservator began the publication from the Government Printing Office of an illustrated work upon "The Forest Flora of South Australia." It is in royal folio size, and is published in quarterly parts, each containing five colored plates with the corresponding text matter. The eighth part is now in course of preparation, and will be issued at an early date. It is expected that when finished there will not be less than thirty parts. Some 2,000 copies are published. The work has been very favorably commented upon by the press in all parts of the world, especially the illustrations, which are produced upon stone by Mr. Barrett, the lithographer at the Government Printing Office, Adelaide.

At the end of each financial year—June 30th—the Conservator issues an "Annual Report upon State Forest Administration in

South Australia." This gives full details of the year's operations of the Woods and Forests Department. It is generally accompanied by plans showing, in detail, the various plantations which may have been formed under his supervision during the year under review, as well as giving the progress which has been made in Forest Conservancy generally in the colony. These reports are freely distributed, and are instructive to those interested in arboriculture.

The forest reserves and their respective areas to date are as follows:—

District in which situated.	Name of Forest.	Areas at June 30th, 1886.	Grand Totals.
		Acres.	Acres.
Northern District..	Bundaleer Forest.....	22,000	
" ..	Wirrabara Forest.....	48,553	
" ..	Mount Remarkable Forest	160	
" ..	Penwortham Forest.....	84	
" ..	Mount Brown Forest	19,312	
" ..	Hall Forest	2,467	
Total area of Forest Reserves in Northern District ..		—	92,576
Central District ..	Port-road Reserve	43	
" ..	Goolwa Reserve	170	
" ..	Belair Reserve	540	
" ..	Mount Barker Reserve	230	
" ..	Angas Reserve.....	5,977	
" ..	Ridley Reserve	7,067	
" ..	Burdett Reserve	6,872	
" ..	Finniss Reserve	2,235	
Total area of Forest Reserves in Central District		—	23,134
Western District ..	Wallaroo Forest	4,174	
Total area of Forest Reserves in Western District....		—	4,174
Southern District..	Mount Gambier Forest	250	
" ..	Mount Burr Forest	14,742	
" ..	Mount Muirhead Flat Forest	39	
" ..	Glen Roy Flat Forest	8,150	
" ..	Mundalla Forest	1,020	
" ..	Bordertown Forest	1,165	
" ..	Cave Range Forest	5,345	
" ..	Penola Forest	8,769	
" ..	Mount McIntyre Forest	5,960	
Total area of Forest Reserves in Southern District ..		—	45,440
Grand total area of Forest Reserves at June 30th, 1886..		—	165,324

THE WOODS AND FORESTS DEPARTMENT. 43

On the 30th June last the statement of all lands enclosed and devoted to the purpose of planting, and the encouragement of a natural growth of trees in the indigenous forests, stood as follows :—

Name of Forest.	Area Enclosed at June 30th, 1885.	Enclosed during 1885-6.	Total Area under operation, June 30th, 1886.
	Acres.	Acres.	Acres.
Bundaleer	3,004	861	3,865
Wirrabara	2,010	158	2,168
Mount Gambier	250	—	250
Mount Muirhead Flat	39	—	39
Mount Brown	182	—	182
Port-road	22	5	27
Kapunda	38	12	50
Boolcunda	20	—	20
Mount Burr	78	—	78
Mount McIntyre	16½	60	76½
Railway Reserves	30	—	30
			6,685½

There are six nurseries under the department, namely, Mount Brown, Wirrabara, Bundaleer, Kapunda, Belair, and Mount Gambier, containing an aggregate area of thirty-three acres. These have been hitherto raising about 1,000,000 trees annually, but by the means of recent improvements it is expected that at least 2,000,000 plants will be raised in them in the future.

Last season the department succeeded in successfully planting over 500,000 young trees, but during the current year it is expected that the operations will result in at least 1,000,000 trees being added to the plantations.

The staff of the department consists, besides the Conservator, of two clerks, four foresters, six nurserymen, three foremen, six cadets, and thirty-five regularly employed laborers. During the planting season over 100 extra men are employed.

Not the least pleasing feature in connection with the department is the fact that the revenue exceeds the expenditure by from one to three thousand pounds annually. Last year the whole expenditure of the department amounted to £5,463 9s. 11d., whilst the revenue was £8,123 7s. 11d. This year the revenue is expected to be close upon £10,000.

Since 1876, £58,215 18s. 7d. has been expended upon the Forest Reserves, whilst the revenue received during the same period

from these forests amounts to £59,043 0s. 8d. Thus the whole works of the department have been carried out without any actual expense to the country, at the same time that the approximate value of the permanent improvements executed upon the reserves are estimated at over £150,000.

GOVERNMENT GEOLOGIST'S DEPARTMENT.

The importance of a geological department in all countries is now universally recognised. To a colony such as South Australia, yet in its infancy, this importance is increased by reason of the desire of the people to find out its hidden mineral wealth and its subterranean water supply—for upon both of these sources greatly depends the position which the colony may, in the future, occupy in relation to its neighbors.

This truth was recognised by the Legislature of South Australia in 1882, and the necessary steps were accordingly taken to establish a department under the leadership of Mr. Henry Y. L. Brown, F.G.S. He arrived in the colony in December, 1882, and at once entered upon his duties.

The colonies of New South Wales and Victoria already had similar departments, and had geological surveys of the country in progress. It was deemed advisable that South Australia should follow their example, and to further this purpose, an assistant geologist (Mr. Harry P. Woodward, F.G.S.) was appointed, and a staff of surveyors formed.

Subsequently, owing to depressed times, this project was abandoned, the geological survey staff was disbanded, and the Government Geologist was obliged to conduct his duties without assistance. Soon after his arrival in the colony, a flying visit was paid to Mount Gambier, Millicent, and Naracoorte *via* Lake Alexandrina and the Coorong.

The first place visited with regard to water supply was Wilmington. A bore was there being put down, in search of artesian water, to a depth of 350ft. A supply of water had been struck which rose to within 100ft. of the surface. An examination of the country showed that there was no likelihood of artesian water being met with by boring to a greater depth, and the work was discontinued.

Callington was next visited, and a report given on the probability of well water being found on the stock-road.

After examining the country in the Hundred of Dublin, a report was made in favor of an underground supply of water being met with. A bore was accordingly sunk, and water was struck at

317ft. At a depth of 390ft. good stock water was struck and rose within 14ft. of the surface. The supply is over 20,000 gallons per day. A second bore has since been put down in the same district, and a supply of 20,000 gallons per day has been got at 212ft.

At Barunga Gap a proposed site for boring was examined and favorably reported upon. A bore was put down, and at a depth of 930ft. a supply of 26,000 gallons of water per day was obtained, and rose in the tubes to within 345ft. of the surface. The quality of the water was similar to that got in the Dublin bore.

At Wallaroo, where water is found in shallow wells in the sand on the sea beach, a series of trial bores was recommended. The intention was to have tested the mouth of an ancient river which apparently exists there. One bore was put down to a depth of 165ft., 100ft. being in bed rock. Salt water only was met with, and the experiment was not continued.

On the 21st March, Mr. Brown started on a journey to the north-east country. His object was to ascertain whether the gold-bearing rocks of Mount Browne (New South Wales), and the cretaceous formation in which artesian or other wells might be found, was continued into South Australia.

Travelling from Adelaide to Beltana he proceeded to Waukaringa, where a bore had been begun in search of artesian water. After examining the strata, he advised that the work should not be continued. From there, *via* Thackaringa, Mt. Browne diggings, and Cooper's Creek, to the north-east corner peg on the Queensland boundary, and on to Pandie Pandie station on the Diamantina River, Clifton Hills, and Innamincka. The return journey was made *via* Strzelecke Creek to Mulligan Springs, thence to Blanchewater, Mount Lyndhurst, and Beltana, reaching Adelaide on the 10th of July. This report shows that the gold-bearing rocks were not found to be continued from New South Wales into this colony. The Flinders Range is the nearest point where rocks, likely to prove auriferous, outcrop, the intervening country being covered with cretaceous and tertiary deposits.

The report concerning the underground water supply was, however, of a more encouraging nature. Mr. Brown pointed out that the water flowing from the mound and other springs, was derived from underlying horizontal strata of cretaceous age in which it is stored. He was, therefore, of opinion that artesian water was most probably to be got over a large area of this formation.

In the following year artesian water was struck in a bore at Tarkinna, at a depth of 1,220ft., and since then has been got, by boring, in large quantities near Hergott, Coward, Strangways, and Mulligan Springs. These more recent bores, however, are situated within a few miles of the mound springs.

Next an inspection of the country from Wellington, on the River Murray, to the Victorian boundary east of Bordertown, commonly known as the Ninety-mile Desert, was undertaken for the purpose of reporting on the question of a water supply along the route of the intercolonial railway. The report was in favor of boring for artesian water. Four bores were subsequently put down—one at Cooke's Plains, one at Ki Ki, one at Rogers' Gap, and the fourth at a place not named. Unfortunately, however, these bores were abandoned before they were finished, and no good resulted at the time.

In September a report was made on the geology of Yorke's Peninsula, special attention being paid to the matter of artesian water supply being probable in the country between Clinton and Curramulka. In May, 1885, a journey was made from Port Augusta to Eucla, and with regard to the water supply—one of the main objects of the journey—it was not considered probable that artesian water would be found in the country lying between Port Augusta and the Gawler Ranges. To the westward of those ranges the prospect was more favorable. But even there it would in great measure depend on the elevation of the country above the sea; also whether the water is dammed back and sufficiently obstructed in its passage seawards, to produce pressure capable of bringing it to the surface. The report made upon this journey gives particulars of the supply and quality of the water in the various wells visited during the journey. The Nullabor Plain, on the Great Australian Bight, the locality in which it was most desirable that water should, if possible, be procured, was now reached. Some years previously the Government had sunk a bore to a depth of 326ft., but had failed to pierce the chalky limestone of the older tertiaries.

The Geologist, after making a careful examination, reported that, in his opinion, water-bearing drifts underlaid the older tertiary limestone, and that by boring water would be found. On the strength of this report the Hon. the Commissioner of Crown Lands determined to put down a bore at a sight selected by Mr. Brown. This was twenty miles from the head of the Bight. The undertaking was most successful; water was struck in a

stratum of sand, and rose in the bore to within 115ft. of the surface. The water is of good quality, and the supply, from a depth of 200ft., equals sixty-eight thousand four hundred gallons per day (68,400). The bore was put down to a depth of 777ft.

In former times the only water to be found in this immense district was that which chanced to collect in small rock-holes, and the country was therefore not available for pastoral purposes. But now that it has been proved that an inexhaustible supply exists underground a large area of country fit for grazing purposes is made available.

The return journey was made *via* Mount Finke, Wilgena, and Wirraminna, and reports were made on places where water might be got by boring, and upon the geology of the country generally.

Following upon this, came an inspection of the country in the neighborhood of Beetaloo Springs. This had reference to the construction of dams for the supply of water to Yorke's Peninsula.

Later on reports were given with regard to a site for boring near Wasleys, but, unfortunately, though water was struck, it proved to be salt.

In December, 1886, a site for a water bore was chosen at Tintinnarra, in the Ninety-mile Desert, and in March of the present year water was struck at a depth of 246ft. It rises to the surface and gives a supply of 48,000 gallons per day at a depth of 35ft. The quality is exceedingly good. A bore had previously been put down at Cold-and-Wet station, to a depth of 830ft., but no water was found. This result was remarkable, as the tertiary beds passed through were most favorable for the occurrence of water.

During February, Sixth Creek and Teatree Gully were examined, and were reported to be capable of greatly increasing the supply of water to the city of Adelaide.

The first work undertaken in reference to mining was the inspection of the Woodside gold mines in January, 1883. A report with map attached, was published in the annual report of 1882-3. At this time the reefs had not been prospected to any depth below the water level, but an opinion was expressed that to sink deeper would be a legitimate mining venture, and would probably prove payable. In July, the geology of a portion of the Mount Lofty Range was mapped out, and subsequently a map was made of the gold reserves of the hundreds of Kuitpo and Noarlunga.

During May and June, 1884, with the object of making a minera-

logical and geological map of the district, the country east and west of Farina was examined. At the Cutaway Hills, Leigh's Creek, indications of gold were got by prospecting, and the locality was recommended as being one worth testing systematically.

In December a geological map of the Echunga goldfields was completed, and one of the Barossa field was begun.

In May, 1885, the Geologist inspected and reported on the country between Port Augusta and Eucla. He considered the country westward of Port Lincoln Gap as far as Uno, and westward of the Gawler Ranges, to be metalliferous, and that, in addition to other metals, gold might be found.

Eighty miles north of Fowler's Bay, a bed of lignite, or brown coal, was visited. It can be traced across a lake for a distance of about half a mile, and down its course for upwards of two miles. It has been bored into, and a section showed :—Lignite 30ft. ; grey clay and ironstone 9ft. ; lignite 1ft. At this depth the bore was discontinued.

The Gumeracha and Watt's Gully goldfields, Burton's mine, Durdan mine, and other gold localities in the district were next visited, and after reporting on the discovery of reef and alluvial gold near Willunga, the silver-lead discoveries near Oulnina, in the north-east were inspected; also other lode outcrops in that district, as far as Thackaringa, on the New South Wales border. Before returning, the Broken Hill, Day Dream, and other well-known silver mines were visited.

Reports were made on the supposed discovery of coal near Auburn, silver near Clare, quarries on the Finnis river, and proposed sites for wells or bores in the hundred of Mulcoolwurtie.

An inspection was made of country in the neighborhood of Jamestown and of Port Lincoln.

Kangaroo Island was visited for the purpose of investigating a reported discovery of tin. The Ulooloo goldfield was reported on, and a map of the field prepared. Also a large collection of rocks and fossils was made, and, together with a geological and mining map of South Australia, was sent to the Colonial and Indian Exhibition in London. The map is made on a scale of eight miles to an inch.

Early in 1886, reports were made on the goldfields of Talunga, Gumeracha, and Mount Crawford, and the Mannahill reefs. At Echunga a series of shafts and bores were put down to test the deep leads.

In July silver-lead was said to have been discovered at Carrieton, Orroroo, Robertstown, &c., but an examination, made by the Geologist, showed that the ores contained but little silver, and in most cases none at all.

Various localities deemed to be auriferous were selected by officers of the department, and prospecting parties were organised to test them. The results were fairly good, and proved that gold could be got over an immense area of country.

During August the Neales river was visited, and a report was made on the discovery there of alluvial gold. Payable quantities were found by the prospector, and the field has subsequently been worked to a small extent.

In October came the news of the discovery of the Teetulpa goldfield. This place was twice visited, and reports made concerning it. The second visit was in December, and the Manna-hill reefs were inspected at the same time, and a detailed report made. Ten tons of stone from five different claims were sent by the department to Melbourne to be tested as to value. The returns ranged from 3dwts. to 2ozs. of gold per ton.

During the early part of 1887 a record of the mines of South Australia was compiled and published. This purposed to give, as completely as was possible, a description of every mine opened in the province up to the present time. Each mine is arranged in alphabetical order under the head of the metal it produces in greatest quantity.

In January of this year the gold-workings at Sixth Creek were visited and reported upon. The Gumeracha goldfields, the German and other reefs in the neighborhood, were visited, and also the Balhannah, Grunthal, Montacute, and Mount's mines. In February a visit was paid to the districts of Mount Barker, the Meadows, Blackwood Gully, Port Elliot, and Goolwa. Subsequently an examination was made of the mines near Strathalbyn, and the Hundred of Waitpinga. The report shows that this hundred is a favorable one to the occurrence of gold.

The goldfields of Forest Range and Blackwood Gully were inspected; and, subsequently, those in the Hundred of Myponga, including a new discovery at Blackwood Gully.

In April visits were paid, first to the new rush at Barossa, and then to Teetulpa and King's Bluff in the north-east.

In addition to those journeys a great deal of work has been done in the office, more especially in the matter of reporting on specimens of ore sent from all parts of the province.

On the 17th of June, 1886, the department lost the valuable co-operation and assistance of Mr. Harry P. Woodward, F.G.S., Assistant Geologist. The term for which he had been engaged expired, and he returned to England. Besides the work already noticed, in which he took a prominent part, he accompanied the South Australian and Queensland Boundary Survey party as far north as lat. $23^{\circ} 10'$, and furnished a report on the country passed over.

Space does not permit of an extended notice of mining matters, nor is it essential that one should here be given. The "Mining Records of South Australia," in pamphlet form, are obtainable at the Government Printer's, King William-road, and are also to be had in the Exhibition Building free of charge.

The principal metal exported is copper. The statistics published by the Government show that in the year 1843 copper ore of the value of £23 was exported, but five years later the maximum value was reached at £310,172, representing $16,323\frac{1}{2}$ tons of ore.

In 1873, the export equalled 27,382 tons, but owing to the fall in prices the value was put at £133,871. Of refined copper the first record is in 1848, when 73cwt., value £215, were exported, and the largest quantity was in 1867, viz., 156,863cwt., value £637,384. In 1872, 149,050cwt. were exported of the declared value of £680,714. The total quantities exported up to 1886 are as follows:—

	£
Copper 3,086,134cwt. =	12,696,216 value
Copper Ore 588,305 tons =	5,920,487 "
Regulus 2,972 tons =	117,516 "

Next to copper, the highest figures come under lead and lead ore:—

	£
Lead 23,535cwt. =	50,376 value
Lead Ore 8,789 tons =	148,744 "
Bismuth and } Bismuth Ore }	.. 1,402 $\frac{1}{2}$ cwt. = 16,739 "
Manganese 2,078 tons =	14,857 "
Emery	= 1,022 "

Gold is given, officially, as being 18,152ozs. of the declared value of £70,963, but it is well known that a far larger quantity has been procured. During the first three years that the Echunga goldfields were worked, viz., 1852–3–4, it is estimated that gold to the value of £250,000 was obtained, and since then the field has afforded a living to many men, who have worked continuously; and from the time the Teetulpa field was opened in October, 1886, to the present

time, the yield is calculated as being fully equal to £200,000. The total declared value of minerals exported up to the end of 1886, is £19,075,040.

In addition to copper, silver-lead, and gold, there are mines containing bismuth, cobalt, iron, nickel, and manganese.

The reports and maps published by the department are as follows :—

General Geological Map of the Province. New Edition.

Report on Woodside Gold Mines.

Report on Geological Examination of the Province—Annual Report for 1882-3.

Report on Country East and West of Farina.

Report on Country North-West and North-East of Farina.

Report by H. P. Woodward on Country East of Farina and North to lat. 23° 10'.

Report on Lakes in Mount Gambier District.

Report on Echunga Goldfields.

“ Country from Port Augusta to Eucla. .

“ Journey to Silverton.

“ Barossa and Para Wirra Goldfields, with Map.

“ Yorke's Peninsula.

“ Gumeracha and Mount Crawford Goldfields, with Map.

“ Ulooloo Goldfields, with Map.

The Mining Records of South Australia.

Maps can be obtained at the office and also in the Exhibition Building, free of charge, and the Reports at the Government Printing Office.

WATER SUPPLY.

The history of our first half century reveals the fact that one of the greatest wants of South Australia is a plentiful supply of water for irrigation and other purposes; and there is at this moment a consensus of opinion that in the wise and provident conservation and utilization of even the limited supplies of water which are available at our command we shall lay the sure foundation of an era of unparalleled prosperity.

In the extent and quality of our lands we can justly claim favorable comparison with any country in the world.

Area.—The area available for profitable cultivation is, however, limited to about one-twentieth part of our territorial area of 243,244,800 acres (this is exclusive of the "Northern Territory" of our province). This limit is not due to the quality of the soil, the inaccessibility of the locality, or similar cause, in which respects there are superior advantages, but is due to an insufficient rainfall.

Rainfall.—The records at the Adelaide Observatory (the Observatory is situated on the south park lands of the city 140ft. above sea level) show that rain falls over the city on an average 127 days in the year, chiefly during the months of May, June, July, and August, and that the average yearly quantity during the last twenty-five years has been 20in. A diagram is annexed showing the average rainfall at Adelaide, and also at Kooringa, a town 100 miles north of the metropolis, from which the cyclic periodicity can be inferred, if it is safe to do so from so short a record.

Mount Lofty, a prominent feature in the landscape, eight miles distant from the city, and 2,234ft. above sea level, has the maximum record of 42½in.; the next highest—away from the same mountain range—being Mount Gambier, in the south, with 31½in.

In the hilly districts, about one hundred to one hundred and fifty miles north of the city of Adelaide, the average is from 18in. to 25in., in the heart of the best agricultural areas of the north 15in. to 17in., and in other farming localities 10in. to 13in.

Still further in the interior, in the far outlying pastoral districts, the minimum of 6in. to 8in. is all that falls.

Natural Waters.—Notwithstanding this small rainfall the natural supplies of water are not so unimportant as might be inferred from the foregoing, or indeed as generally supposed.

In the south-eastern portion of the province, south of latitude $36^{\circ} 30'$, water of good quality, in great abundance, is found in the tertiary limestone, for the most part very near the surface. In many places towards the coast-line there is a considerable surface outflow forming ever-flowing streams of no mean size. The rainfall in this district is from 20in. to 31in., an unusual proportion of which is absorbed by the permeable marine limestone and sandstone through which, at the normal water-level of the country, the subterranean stream slowly finds its way towards the sea. This flowing of the underground waters can be distinctly seen in the limestone caves, in wells, and in the lakes in the volcanic basins of Mount Gambier.

At some distance inland, on the higher levels, the storm waters—gathered into streams or accumulated into lakes or swamps—soon finds its way underground to the normal water-level through pipes in the limestone (known in the district as “runaway holes”). Some of these water passages are of great interest, being in the shape of an inverted cone, 40ft. to 50ft. deep, with a surface diameter of above 30ft. At times of heavy rainfall these holes are flooded over, and a whirlpool can be seen until the whole of the water has been swallowed up.

On the lands towards the coast the Government have found it necessary to carry out very extensive drainage works to carry off the freshwater, and a large area has thus been successfully reclaimed and occupied for cultivation. The farmers owning this land are now awaking to the fact that—even in this district—the water is too valuable to be allowed to run to waste, and in the near future intense cultivation under irrigation will certainly be very generally practised to the great benefit and advancement of the province.

River Murray.—The only river of any magnitude is the Murray, which enters the province over its eastern boundary and flows thence in its circuitous course of four hundred and eighty (480) miles to its *debouchure* at the southern ocean. The river is generally in flood from September to December, and at its lowest from March to June. The annual quantity of water discharged is from 210,000 to 550,000 million cubic feet. Steamers of considerable size navigate its waters, and public attention is now directed to its

further utilization for irrigation, the success of which is a foregone conclusion, and is looked forward to as a certain stride of substantial progress.

Mountain Streams and Springs.—In the chain of mountains known as Mount Lofty Ranges, commencing at Cape Jervis on the southern coast and trending northerly for about one hundred miles, there are very numerous streams of delicious water having their source in springs flowing from the upland valleys. These waters are used to some extent for the irrigation of market gardens, in which most descriptions and varieties of luscious fruits and every vegetable that could be desired are grown. Similar springs exist in most of the other mountain ranges of the province, particularly the Clare Hills, the Flinders Range, and even the Freeling Heights, 450 miles north of Adelaide. There is a remarkable hot spring near the northern extremity of the latter range; the temperature of the water as it flows from the spring is 130° Fahr., and a considerable smoking stream is formed for about a mile, when it is lost in the gravel bed.

Many watercourses ("rivers" they are called when above a few yards wide and the water constantly flowing) convey ever-flowing streams from the mountain ranges to the plains below to serve the wants of man and beast; but, so far, little has been done on the plains to utilize the waters for irrigation except in the immediate vicinity of Adelaide.

Wells.—In many localities good water is readily obtainable in wells at moderate depths, and large supplies are drawn from this source.

Incomplete geological knowledge of the province.—In an extensive country like ours it was not to be expected that the first half century would suffice for obtaining an accurate knowledge of the wealth which nature has stored beneath our feet, whether it be minerals, fuel, or water.

Although much has been done to develop our mineral resources, it is unquestionable that other rich mines of copper, silver, tin, gold, and probably diamonds still lie concealed in our hills and valleys.

Hitherto no coal has been discovered within our borders, but rumors of its existence are being continually circulated, and many practical coal miners are confident that the day is not far distant when we shall find this storehouse of national prosperity; scientific opinion is, however, unfavorable.

So it is with the underground water supplies; every day is revealing, in one part of the province or another, new—although very old—natural subterranean reservoirs of the precious fluid.

Artesian Wells.—Up to a year or two ago the question “shall we ever have a flowing artesian well?” was often debated, but not satisfactorily answered. Now, however, the diamond drills of the Water Conservation Department have brought the debateable into the region of certainty by the discovery of flowing wells in three widely separated portions of the province—viz., the Far North on the Transcontinental Railway line; the Willochra Valley in the northern agricultural settlement; and the South-Eastern District on the Intercolonial Railway line.

Mound Springs.—In the Far North the presence of water under conditions favorable to artesian wells was indicated by a series of wonderful mound springs, which, in some instances, have built up a huge dome of carbonate of lime, and the water is held in large cups at the top; others are quite roofed over the top and the water is concealed within; while others again have but low walls of lime or clay and give off a flowing stream of water. It was apparent that this water came from a considerable depth, and probably from a great distance.

Cretaceous Basin.—A geological examination proved the existence of a very extensive basin, bounded on the north-east and east by the mountain ranges of Queensland and New South Wales; on the south by the outcrop at the bed rocks north of Farina and in the Freeling Heights in South Australia; and on the west partially by the primary and igneous rocks near the Overland Telegraph line; the precise limit on the north and west being still a matter of uncertainty.

The portion of this immense basin within the boundaries of the province comprise a surface area of fully 100,000 square miles, and it has been found by boring that horizontal strata obtain from the surface down to the bed rock, consisting of homogeneous argillaceous silt intercalated with bands of hard blue limestone containing iron pyrites, and their marine origin is evident from the presence of numerous marine fossils. The Rev. Mr. Howchin, F.G.S., has very ably investigated and described these strata.

Fossil Foraminifera.—In an article on the *Foraminifera* of the beds, Mr. Howchin says:—“These borings preserve a wonderful “sameness of character throughout their entire depth. This is true “both as to the mineral depositions and palæontological remains.

"The same similarity is observed when the respective borings are compared with each other, a majority of the species observed being common to the geological area in question. The respective borings have evidently passed through beds of contemporaneous age and which were deposited under remarkably uniform conditions, and these persistent through a period of time sufficiently prolonged to permit this great thickness of deposit being thrown down. That this deposition was carried on at a very slow rate is evident from the presence of *Foraminifera* throughout the entire depth. Twenty samples from various depths were washed and microscopically searched, and, with the exception of two, yielded in each case more or less species of *Foraminifera* of the following genera:—*Hyperammina Reophax*, two species; *Hap-laphragmium*, four species; *Bigennerina*, two species; *Gaudryina*, three species; *Verneuilina*, *Cyclammina*, *Cristellaria*, *Marginulina*, two species; and others."

The Government geologist (H. Y. L. Brown, Esq.) has also reported on the formation which he describes as of cretaceous age.

Source of Water.—It is evident that the source of the water is the mountain chain of Queensland on the north-east, and that under the clay beds, at a depth in the centre of the basin of probably 2,000ft., rising to two or three hundred feet near the shores of this secondary sea, there is a permeable bed of sand and gravel conducting the water throughout the entire basin, and that when the sand bed is tapped in boring the hydrostatic pressure brings the water over the surface, unless the surface level is above the height to which the pressure is equal.

Government Artesian Wells.—The borings in this locality by the Government, under the Department of the Conservator of Water, have been very successful in tapping large supplies of artesian water; the quality is, however, slightly brackish.

The four most successful borings are the Hergott, Coward, Strangways, and Mungamurtiemurtie, at depths of 342ft. 3in., 308ft., 365ft. 2in., and 237ft. 5in. respectively, with corresponding supplies per diem of 100,000, 1,200,000, 1,200,000, and 52,000 gallons, in each case flowing from the six-inch pipe several feet above the surface. The temperature of the water being 86° to 90° Fahr.

Artesian Well, Willochra Valley.—The boring in Willochra Valley, about 200 miles north of Adelaide, after passing through salt water in gravel beds near the surface, penetrated the tertiary

clays to a depth of 215ft., when good water was struck in white argillaceous sand. The quantity flowing over the surface is 10,000 gallons per diem, and the quality suitable for domestic supply, locomotive purposes, or irrigation.

Artesian Well, Tintinnarra.—The successful boring at Tintinnarra in the south-eastern district passed through tertiary marine beds of sand and limestone, highly fossiliferous, for 160ft., and then black carbonaceous clay to 251ft., at which depth good water was struck and immediately rose over the surface at the rate of 4,300 gallons per diem. The quality is excellent.

Government Wells.—It is in the extensive tracts of outlying country, away from the natural surface supplies, that the scarcity of water has been most felt, and it is to these localities that the Government have devoted the most of their attention. (In this article the waterworks for the supply of Adelaide and other large towns are omitted, as they are dealt with in a subsequent part of this book.)

There are 199 Government wells for public use, giving a supply of one million gallons per diem. To these should be added the borings already described, yielding a supply of five million gallons per diem.

Nullarbor Plains.—In the Far West, on the boundary of the adjoining province of Western Australia, there is an elevated plateau of good pastoral land which has hitherto been lying unoccupied in consequence of the entire absence of water.

Within the last few months the Conservator of Water has succeeded in satisfactorily completing two deep borings, which yield a large supply of stock water. In each of these bores salt-water was struck at about sea-level—viz., 182ft. and 235ft. respectively. The strata passed through being marine limestone and chalk, highly fossiliferous, determined by Professor Tate, F.G.S., &c., as older tertiary; at 414ft. in the one, and 470ft. in the other, blue and black clay was entered and the water reached beneath the clay in a sand bed at 752ft. and 735ft. respectively, the latter being ten miles further inland than the former. The pressure is, however, unequal to bringing the water higher than from 135ft. to 187ft. from the surface. The temperature of the water is 81° Fahr. The area occupied by this formation is about 20,000 square miles, and similar success can now be safely predicted throughout the entire plateau.

Government Reservoirs.—With a rainfall of six to ten inches and an annual evaporation of sixty inches very little natural

surface water could be expected, and it soon became patent that any storage tanks or reservoirs should be as deep as possible. The construction of reservoirs in the usual way, by retaining embankments only, is generally impossible from the level nature of the country, and the alternative of excavating tanks and reservoirs in retentive clay beds has been generally adopted. The Government, by the Water Conservation Department, have been able to very successfully carry out these works by using steam ploughing and scooping machinery manufactured by Messrs. John Fowler & Co., of Leeds. A large number of reservoirs have been thus excavated to depths of 18ft. to 25ft., and holding capacity of three to eight million gallons.

There are 227 Government tanks and reservoirs for public use in the country districts with a holding capacity of 237,000,000 gallons.

ADELAIDE WATERWORKS.

The following description of the Adelaide Waterworks and the Sewage Farm at Islington has been kindly supplied by Mr. Charles W. Smith, A.M., Inst. C.E., of the Hydraulic Engineer's Department. This department has under its control all water supplies to country towns within the province, and the Adelaide sewers.

The City of Adelaide is situate on the Adelaide Plains, which reach in a westerly direction from the foot of the Mount Lofty Ranges to the sea.

The city is four miles west from the ranges and six miles east from the sea. From the Thorndon Park reservoir to the city the distance is six miles, and from the Hope Valley reservoir seven miles, both in a north-easterly direction. The area supplied by these two reservoirs extends for distances varying from two and three-quarters miles to twelve miles from the city, and covers over 100 square miles, supplying a population of from 90,000 to 100,000.

The levels of the city vary from 175ft. to 100ft. above the level of the sea. The more elevated of the suburban townships have supplies independent of the Hope Valley and Thorndon Park reservoirs.

The marine township of Glenelg has a fairly large population, and is only 17ft. to 25ft. above sea level. Port Adelaide, the chief port in the province, is situated on the Port Creek, within two miles of the sea, and from 13ft. to 18ft. above its level.

The source of supply is the River Torrens, where it issues from a gorge in the western slopes of the Mount Lofty Ranges. The catchment area equals about 150 square miles, and consists of very hilly ranges of a slate and sandstone formation, covered with poor soil, and sparsely timbered with "bastard box" and stringybark.

The flow in the river is constant but very variable, the quantity during the summer months not amounting to more than 7,000 to 10,000 gallons per hour, while in time of heavy winter rains the water flows from 4ft. to 6ft. deep over a weir 140ft. wide.

The head works consist of a heavy masonry weir, about 15ft. high, constructed in a narrow gorge of the river at a point where

it is about 200ft. wide, and at such an altitude as suffices to give the necessary declination to an aqueduct for conveying the water to the two reservoirs, one of which is situate at Thorndon Park and the other at Hope Valley. The level of the weir is 359ft. above low water (sea level).

No filtering appliances are necessary, as the water, after the first of the winter floods have passed over the weir, becomes clear and quite fit for domestic use. The sluice-valve in the weir which governs the intake is then opened, and the water allowed to flow along the aqueduct to the reservoirs. The flow of water is regulated by this valve, which is 4ft. square, and which can be opened or closed in two minutes. No bye-washes are therefore needed for the reservoirs.

The aqueduct is about three and three-quarter miles long, and consists of half a mile of cast-iron pipes 42in. in diameter, laid partly on masonry piers, and for the greater part in a bench excavated along the rocky and precipitous side of the gorge. At one point it crosses the river by an aqueduct bridge 200ft. long. This pipe delivers into an open channel, which is continued round the spurs of the hills. To avoid any long detours, the channel is taken in a direct course through two tunnels of an aggregate length of one-third of a mile. This channel is 10ft. 6in. wide at the top, 4ft. deep, excavated in solid ground throughout, and lined with cement concrete, 9in. thick rendered. It is provided with all necessary under and over culverts, road bridges, scour-valves, bye-washes, &c., and has a fall of 1ft. 9in. per mile, and when running full delivers 1,000,000 gallons per hour. The aqueduct terminates at the second tunnel, the end of which enters the Hope Valley reservoir. At a point, however, along the aqueduct, the water can be wholly or partly diverted from the channel and conveyed to the Thorndon Park reservoir by a 21in. cast-iron pipe. The Thorndon Park reservoir was constructed in the year 1857, and from that time until 1872 was the only reservoir supplying the City of Adelaide, Port Adelaide, and the numerous suburbs with water. The increase of the population and the rapid extension of the suburbs demanded greater storage capacity. The larger reservoir at Hope Valley, with the weir and aqueduct, was therefore determined upon, and so designed as to ensure rapidity of filling. The Thorndon Park reservoir is now only considered supplementary to the larger one, but it is also intended as a reserve in the event of any accident occurring to the other reservoir or its

outlet works. Each reservoir is in direct connection with the city and suburbs, Either can be used alone or together. The two reservoirs are also directly connected by a 21in. and 18in. compound main. The Thorndon Park reservoir is situated in valley, which has been spanned by an earthen dam constructed with a core or wall of good puddled clay, supported on either side with selected clayey materials, well punned in 12in. layers inclining from the exterior slopes towards the puddled wall. This wall is 4ft. 9in. in thickness at the top, increasing in thickness by a batter of 1 in 12 to the natural surface of the ground, whence it diminishes by a similar batter to various depths. The outside slope is $2\frac{1}{2}$ ft. horizontal to 11ft. vertical, and is covered with a compact turf. The slope of the inside is 3ft. horizontal and 1ft. vertical, the entire surface of which is heavily pitch-paved 15in. in thickness. The dam is of a total length of 47 chains, its greatest height being 44ft.; the centre portion is straight and 19 chains long; the two ends of the dam—one being 9 chains and the other 19 chains long—are curved inwards to meet suitable portions of banks of the valley. The outlet works consist of a brick-in-cement valve tower, erected within the reservoir and close to the toe of the inside slope, with outlet valves at various heights to suit the level of the water. From the tower there is a brick-in-cement tunnel, 6ft. 6in. x 6ft., carried through solid ground immediately below the base of the dam to a valvhouse situate at the foot of the outside slope of the dam. Two mains, one 18in. and the other 12in. in diameter, are laid in the tunnel. This reservoir contains at high water 140,500,000 gallons, the depth being then 40ft. The high-water level is 323ft. above the sea. At this height the water covers an area of $27\frac{1}{2}$ acres. The Hope Valley reservoir is formed by an earthen dam crossing the valley at a point just below the junction of two others, thus giving the maximum storage capacity with the minimum length of dam. The dam is straight and nearly half a mile in length; its greatest height is 70ft., and greatest breadth at its base 355ft. It is formed of good selected clay for about two-thirds of its solid contents, and was well punned in 12in. layers by means of heavy corrugated iron rollers drawn by four horses. The core or central wall consists of first-class puddled clay 6ft. in thickness at the top, increasing in thickness by a batter of 1 in 12 below the natural surface of the ground, thence diminishing by a similar batter to various depths. The inner slope is three to one; it is protected by a layer 9in. in

thickness of 2½ in. broken metal, on which is laid heavy pitch-paving 12 in. thick. The outer slope is covered with turf. At the foot of the inner slope a cast-iron valve tower lined with brick-in-cement and cement concrete is built, with valves at different heights to suit the varying level of the water. This tower is connected with a strong outlet culvert of masonry lined with iron, built in the solid ground under the seat of the dam. This outlet leads by a connecting main one and three-quarter miles long, 21 in. and 18 in. in diameter, with the subsidiary reservoir at Thorndon Park. The Hope Valley reservoir is constructed to hold 886,915,752 gallons, the depth then being 51 ft. 6 in.; the high-water level is 347 ft. above the sea; the surface of the water at the 51 ft. 6 in. level comprises an area of 162 acres.

By careful evaporation gaugings carried out daily during several years, it is found that the evaporation from these reservoirs is 70 in. during the year, about one-half occurring during the three hottest summer months, and the total amount being almost the same in each year.

In connection with the two reservoirs there has been constructed on the northern boundary of the city a service tank for the supply of water to the suburbs between the city and Port Adelaide, and the townships between it and the sea. This tank is placed at a level of 170 ft. above the sea, and when full contains 1,041,000 gallons; it is 107 ft. 6 in. square and 17 ft. deep; it is constructed of pressed bricks set in cement, and roofed over with brick-in-cement arches resting on brick piers, the whole being earthed over and laid down in lucerne, and surrounded with ornamental shrubs and trees. The tank is filled during the night from a 15 in. main; the outlet pipe is 15 in., and supplies two 10 in. mains, carried along two roads parallel to each other and a mile apart, to Port Adelaide. In case of any extra pressure being required at the Port, or of repairs, &c., to this tank, a direct supply can at once be established between the Hope Valley and Thorndon Park reservoirs and the Port, the inlet and outlet mains at the service tank being so arranged that the supply to it can be at a moment's notice cut off and diverted to the Port mains. A somewhat similar tank, containing 850,000 gallons, has been built to supply the town of Glenelg and other suburbs lying between it and the city.

Two mains, 18 in. in diameter, convey the water from the two reservoirs to the city, while secondary mains branching therefrom supply the various suburban townships. These two 18 in. mains

have hitherto been sufficient for the demand ; but another main of 18in. in diameter is urgently required to be laid, taking a new line of route towards the suburbs lying to the south and south-east of the city.

The primary mains of from 15in. in diameter to 21in. in diameter have a total length of sixteen miles ; the secondary mains of from 15in. to 10in. in diameter have a total length of twenty-two miles ; while the distributing or street mains from 10in. to 3in. in diameter have a total length of 462 miles. The furthest point supplied is at the seaside, distant fifteen miles from the Thorndon Park reservoir.

The service is high pressure with constant supply, and for domestic use unstinted, the only restraint being, in time of drought or a long dry summer, and the prevention of gross waste, and stopping the supply more or less for irrigation.

The consumption fluctuates from about 1,750,000 gallons in winter to about 6,000,000 gallons per diem in the extreme hot summer months.

The meter system of supply is largely in use, a meter being supplied to everyone desiring it, whether for domestic or manufacturing purposes. A rent, now abolished, of 1s. per month was formerly charged for the use of the meter, the price of water being 1s. 6d. per 1,000 gallons passed through it when situate outside the deep drainage area, and 1s. 3d. per 1,000 gallons if within the proclaimed drainage area.

Telephonic communication is established between the residence of the manager at the Waterworks-yard, Kent Town ; the Head Office, Victoria-square ; Police Station ; Fire Brigade Station ; the reservoir-keeper (residing at Thorndon Park), under whose control the two reservoirs and head works are placed, Kensington Pumping Station, and the superintendent at the Port Adelaide office.

At the foot and partly on the western slopes of the Mount Lofty Range are situated several townships considerably higher than the Hope Valley or Thorndon Park reservoirs. To supply these townships and their environs (area covered, about ten square miles), the waters of several springs and creeks rising in the ranges, and flowing therefrom through rocky ravines and gorges, have been utilised. In three cases wells have been sunk in the detritus which now fills the old creek bed and adjacent to present creek, and the water is conveyed thence by a main to covered service tanks containing about 270,000 gallons each, and placed at

such levels as to command the several townships. These supplies are constant during the winter months, but for a few months in the summer—December to May—the supply has more or less to be augmented by pumping water from the Kensington pumping station. The quantity pumped during each season amounts to about 25,000,000 gallons, the average cost for the past four years pumping being $4\frac{1}{2}$ d. per 1,000 gallons. The rate charged in these high-level districts is now 2s. per 1,000 gallons.

In addition to the above described auxiliary works, a water tower containing 66,000 gallons has been erected at the Semaphore. This was found necessary to keep a constant service on in the district west of the Port River. The leading main is carried over the Port creek or river by means of the swing bridge. The main is disconnected on each occasion of opening the bridge to allow of the passage of vessels, and water is then drawn from the tank in water tower until the connection with the main source is again resumed upon the closing of the bridge.

ADELAIDE SEWERS AND SEWAGE FARM.

The city of Adelaide can fairly claim to hold the unique position of being the best drained city in the southern hemisphere. The system of deep drainage, which has now been completed for nearly two years, has come up to the expectations of its most sanguine advocates; and the concensus of opinion is that it is a pronounced success.

The drainage area—that is, the entire district which can, by reason of the configuration of the ground, be benefited by these works—includes the city of Adelaide, the corporate towns of Hindmarsh, Thebarton, St. Peters, and Kensington and Norwood. The work of connecting with the sewers is still proceeding in the two last named corporations.

The main sewer which receives the street sewers, is constructed for the greater part of its length of cement concrete. That portion which extends easterly from the Frome-road, Adelaide, is of earthenware pipes of a maximum diameter of 24in. The size of the concrete sewer varies from 3ft. 6in. by 2ft. 4in. to 5ft. by 3ft. 4in., and is of oviform section. It is designed to discharge 23,000 gallons per minute. Another main sewer, 3ft. 6in. by 2ft. 4in., traverses Bowden to receive the drainage of Bowden, Brompton, Thebarton, Southwark, &c. Where these main sewers join, the section is changed to a trough shape, perpendicular sides and semicircular top and bottom; it is 5ft. wide and 3ft. 9in. deep. This section is continued until it reaches the straining shed at the sewage farm, Islington.

The sewage farm is situate about four miles to the north of the city, and contains altogether about 470 acres, including roads. The sewage from Adelaide and adjacent towns flows on to the farm by gravitation. The height of Adelaide at the post office is 154ft. above sea level, that of the farm at the point where main sewer enters being 41ft. above the sea. At the northern end of farm the height is 28ft. above the sea. All the sewage is strained before being distributed over the land.

The farm is worked on the broad irrigation principle, combined, in the winter months, with intermittent downward filtration.

The filter beds are thoroughly underdrained, and work most effectually, the effluent carried off therefrom being perfectly clear and pure.

The sewage, after being strained, is conducted over the farm by means of cement concrete carriers and wooden troughing.

The farm has been divided, by fencing, into twenty-one paddocks, varying in area from eight to twenty-five acres; and water has been laid on to each for the use of cattle depasturing thereon. The whole of the farm, excepting about twenty acres of land above the level, is now irrigated. The soil varies from a stiff clay to a sandy loam.

A large sum of money has been spent upon buildings on the farm, including manager's house, dairy, stables, cowsheds, pigsties, &c., and the arrangements are all most complete.

The dairy, for which most of the buildings were erected, had, after being brought into good working order, to be abandoned by reason of the strongly expressed popular prejudice against the produce. The farm is now, therefore, farmed with a view of grazing and fattening of stock and the growth of root crops and other fodder plants.

The production of the land treated with the sewage water has been extraordinary, and it is generally considered that more luxuriant crops could not have been obtained.

The Italian rye-grass, lucern, and mangolds, find a ready sale at high prices.

At present the live stock upon the farm consists of about 300 cows and bullocks, 30 horses, 300 sheep, and 160 pigs.

The rate charged for depasturing large cattle ranges from 3s. 6d. to 5s. per week. Cattle, bought as stores, after being in the farm for three months double their market value. The pigs are well worthy of notice, being as fine a lot as could be seen anywhere; they are fed on mangold leaves, pulped mangolds, lucern, and a little meal, and also the skim milk purchased from a neighboring dairy farm at a nominal price.

The following is a description of last year's cropping of the farm. Many other cereals, fodder plants, and roots not mentioned here, were sown for experimental purposes, and the result of such experiments will doubtless influence the manager in his next year's cropping:—

Lucern.—About 150 acres have been laid down in lucern. The paddocks are watered every three weeks to a depth of 3in.

The soil varies from a sandy loam to a stiff clay. The yield obtained at each cutting is from four to ten tons per acre, cut eight times a year. The lucern brakes let readily for £10 per acre, but is found more expedient for the manager to retain all the land in his own hands in order that the watering may be better controlled and distributed over a larger area.

Italian Rye-grass.—About 150 acres are devoted to Italian rye-grass, watered about four times in the year with a 3in. watering. The average yield is about eight tons per acre.

Mangolds.—About twenty-five acres was sown with mangolds. They were drilled in ridges about 30in. apart. The plants were watered about every three weeks, 3in. deep. The soil varies very much in quality, consequently the crop was not very uniform. The yield was, however, tremendous, giving an average of fifty-five tons per acre, and a maximum yield of eighty-five tons per acre. Some of the roots can be seen in the Northern Annexe of the Jubilee Exhibition. They are quite brobdignagian in size.

Sorghum.—Twenty-five acres of recently levelled land was sown with sorghum, and received waterings 3in. deep every six weeks. Although the crop was patchy the total yield gave an excellent average. The plants were cut twice, giving twenty-four tons per acre at each cut, and afterwards grazed. Undoubtedly this is a most invaluable fodder plant, either for chaffed feed, grazing, or ensilage.

Wheat (for hay).—Fifty acres under wheat yielded about two and a half tons per acre. Three waterings 3in. deep were given to this crop.

Barley.—About thirty acres of land was sown with barley for seed. This crop only had one watering 3in. deep, and this when the plant was 18in. high. It yielded twenty bushels to the acre.

Vines.—Sewage water has proved to be generally suited to the production of the grape. About two acres of trellised vines of all the table varieties gave a splendid yield, about ten tons to the acre, notwithstanding the depredations of the sparrows. About three waterings were given during the season.

Wattles.—Owing to the success which has attended the growth of the wattle on the farm, some of the paddocks have been planted therewith, in widely distanced rows, the usual annual cropping of the land going on at the same time.

There is little doubt that under good management, such as the farm now enjoys, this property must become most valuable, and the income that will be ultimately derived therefrom go a long way towards paying interest upon cost of the works carried out both in the farm and in the towns benefited by the deep drainage system. The last half-year's balance-sheet indicated a profit of £700.

HYDRAULIC ENGINEER'S DEPARTMENT.

Return showing the Number of Waterworks in the Colony constructed by the Hydraulic Engineer's Department.

Name of Water District.	Situation of Works.	Description of Works.	Storage Capacity.	Supply, how obtained.
Adelaide and Suburban ..	<div> <div> <div>Hope Valley</div> <div>Thorndon Park</div> <div>North Adelaide</div> <div>South Park Lands</div> </div> <div> <div>Magill, Hornell's Creek</div> <div>Burnside, Second Creek</div> <div>Burnside South,</div> <div>Marryatville</div> </div> <div> <div>Mitcham, Brownhill Creek</div> <div>North-Eastern Road</div> <div>near Palmer</div> </div> <div> <div>Park Lands, Gawler, and Cockatoo</div> <div>Valley Road</div> </div> </div>	<div> <div>Reservoir</div> <div>Reservoir</div> <div>Concrete Tank</div> <div>Concrete Tank</div> </div> <div> <div>Concrete Tank and Well</div> <div>Concrete Tank and Well</div> </div> <div> <div>Concrete Tank</div> <div>Concrete Tank & Pumping Stn.</div> </div> <div> <div>Concrete Tank and Well</div> <div>Concrete Tank and Springs</div> <div>Concrete Tank and Springs</div> <div>Well, Pumping Station,</div> <div>Service Tank</div> </div> <div> <div>Reservoir</div> <div>Reservoir</div> </div> <div> <div>Four Concrete Tanks</div> <div>Well, Pumping Station</div> <div>Service Tank</div> </div> <div> <div>Weir and Service Tanks</div> <div>Reservoir</div> </div>	<div> <div>Gallons.</div> <div>807,000,000</div> <div>138,000,000</div> <div>1,000,000</div> <div>850,000</div> </div> <div> <div>56,000</div> <div>270,000</div> <div>550,000</div> <div>240,000</div> <div>270,000</div> <div>71,500</div> <div>10,000</div> <div>279,000</div> </div> <div> <div>41,200,000</div> <div>25,700,000</div> <div>660,000</div> <div>279,000</div> <div>12,400</div> <div>6,000,000</div> <div>50,000</div> <div>31,000</div> <div>2,130,000</div> <div>800,000,000</div> <div>50,000</div> </div>	<div>Catchment area of River Torrens.</div> <div>Springs and Pumping.</div> <div>Springs and Pumping.</div> <div>Springs and Pumping.</div> <div>Springs.</div> <div>Springs.</div> <div>Springs.</div> <div>Pumping.</div> <div>Watercourses.</div> <div>Springs and Creek.</div> <div>Springs.</div> <div>Pumping.</div> <div>Springs.</div> <div>Catchment.</div> <div>Springs and Creek.</div> <div>Pumping.</div> <div>Castle Creek.</div> <div>Springs and Catchment Area.</div> <div>River Murray.</div>
High Level Reservoirs ..				
Teatree Gully and Modbury				
Palmer				
Gawler				
Kapunda	Taylor's Run, near Kapunda	Reservoir	41,200,000	Watercourses.
Port Pirie	Nelahaby	Reservoir	25,700,000	Springs and Creek.
Port Augusta	Woolundunga	Four Concrete Tanks	660,000	Springs.
Mount Gambier	Blue Lake	Well, Pumping Station	279,000	Pumping.
Port Germein	Back Creek Gorge	Service Tank	12,400	Springs.
Mount Barker	Section 3827, hundred of Macclesfield	Reservoir	6,000,000	Catchment.
Crystal Brook	Crystal Brook Creek	Weir, Service Tank	50,000	Springs and Creek.
Burra	Bon Accord Mine	Well, Pumping Stn., & Tank	31,000	Pumping.
Hawker	Sections 240, 241, bun. Wonoka	Reservoir	2,130,000	Castle Creek.
Beetaloo (now in course of construction)	Wirrabara Forest Reserve	Reservoir, Concrete Weir 110ft. high	800,000,000	Springs and Catchment
Mannum	River Murray	Reservoir, Pumping Station	50,000	Area.

THE RIVER MURRAY.

This noble stream was first discovered by Mr. Hamilton Hume and W. H. Howell, who started from Lake George, and crossing the river, first named it the Hume. In 1828 Capt. Sturt, accompanied by Mr. Hume, traced the Macquarie River down to its junction with the Darling, following that river down to Fort Bourke. The following year, Capt. Sturt traced the Murrumbidgee to its debouchure into a magnificent stream 350ft. wide, and a depth from 15ft. to 20ft., which afterwards proved to be the Murray, "the antipodean Nile, the prince of Australian rivers," and which has since been found to have a navigable course of nearly 2,000 miles. He followed the river down to a considerable distance, but not being able to find the true channel into the sea, was obliged to return, after enduring great hardships.

In 1829 Sturt was again commissioned to explore the southern rivers, and in company with Mr. (afterwards Sir) George McLeay, sought the Murrumbidgee. They passed the junction of the river which Hume had called after his father, but which Sturt named the Murray, after Sir George Murray, then Secretary of State, by which name it has ever since been known. Sturt found the natives very numerous, and utilised friendly ones by sending them ahead to announce his coming. They reached Lake Alexandrina, which Sturt named after Her Majesty the Queen; named Point McLeay and Point Sturt, and, going around the Goolwa side of Hindmarsh Island, walked along the shore to the Murray sea-mouth.

Passing through a period of intermittent vicissitudes, in which no doubt the conflicting interests of naval traders played important parts, very little of any importance has since been done to develop the advantages incident to this interesting river hitherto.

Our legislators have comparatively ignored the commercial advantages of this grand river, and the result has been that less highly favored neighbors, after marvelling at our apathy, have secured for themselves the larger portion of these advantages. Possessed of a waterway far superior to that of the other colonies, South Australia could have commercially annexed considerable portions of the New South Wales and Victoria trade, but the

opportunity was not improved, and consequently a considerable amount of commerce took other channels, from which it will be difficult to divert it. Very early in the history of the colony the keen eye of the then Governor, Sir Henry Young, recognised the advantages that might be secured to South Australia by the improvement of the Murray channel for navigation. But the uncertain rises of the water, together with the limited amount of trade, all had a prejudicial effect on the important feature of economic trade. Consequently it was not until 1874 and 1875, when Mr. Boucaut again directed public attention to the importance of the river trade, that any fresh effort was made to utilise or improve the advantages of our position.

Up to the year 1883, ninety-two steamers were employed in this trade, forty-four being registered in South Australia, and forty-eight in Melbourne and Sydney. The average carrying capacity of each steamer and barge may be placed at about 200 tons, and as much as 500 tons have been taken at one steamer load.

One drawback to this noble stream, is the danger attendant upon the passage through its mouth, which has been a standing difficulty and disappointment to the colony. Being exposed to the full sweep of the gigantic waves of the southern ocean, this entrance is continually shifting, silting up one channel, and opening out another. Though river steamers have been navigated in and out several times, there is always some measure of risk about it. But it is not too much to say that we have not turned the one great river we possess to full account for the convenience of produce; for a port at its mouth capacious enough to receive large vessels would do more than anything else to enable us to utilise the river as we ought. Without being over sanguine, we believe a great future lies before the colony in the further development of the River Murray trade.

Not the least valuable feature of this great river is the enormous area of splendid soil along its banks, to which some practical and economic system of irrigation might be applied. Deficient in rainfall sufficient for the growth of cereals, and other ordinary products, it embraces a climate of great unanimity, admirably suited to an irrigation system. If, by a gradual system of locks, the normal level of the river could be raised, so as to provide on the one hand a permanent water carriage, and at the same time establish a natural reticulation of water by gravitation over the chief portions of those magnificent plains along its banks, no doubt

a numerous and happy population would be planted along its banks.

The fact of the permanent establishment of the river through South Australian territory as a highway of commerce would in itself provide a reliable market for such a colony, having the metropolis on the one side, and the vast avenue of the trade of Bourke, Riverina, &c., on the other. Roughly estimated, it may be computed that over 2,000,000 acres would be available for irrigation along its banks from the boundary to the mouth; and which are only waiting the enterprise of the capitalist, the agriculturist, and horticulturist, to be utilised, upon the highest system of modern cultivation, whether by cereals, pasture, orchards, orangeries, or vineyards.

ROYAL GEOGRAPHICAL SOCIETY OF AUSTRALASIA.

South Australian Branch.

The South Australian Branch of the Royal Geographical Society of Australasia was founded at an influential meeting of citizens held in Adelaide on the 10th July, 1885. Branches had been previously formed in New South Wales, where the movement was initiated in 1883, and in Victoria in 1884.

From its position, geographically remote from the older portions of the habitable globe, and owing to its comparatively recent discovery, Australia has formed an inviting field for the adventurous work of exploration. At briefly recurrent intervals, hardy discoverers have dared the dangers of the great southern unknown lands, and have plunged into the mysteries of Australian untried shores and wilds. The roll of brave men, who have won laurels in discoveries along the extended coasts, and in the inland regions of Australia, is rich and long.

In the dim and distant past, Spaniards, Portuguese, and Dutch, pushed away southward, till we hear tell of a "great south land, afar off, under the southern cross." And then James Cook, sent out by the, at that time newly organised, now renowned, Royal Geographical Society of Britain, explored the eastern shores of the new continent; and, landing near Cape York, took possession for the "Empress of the Seas" under the title of New South Wales. Another brave rover of the seas, Flinders, found the dividing waters of Bass's Straits, and so proved Tasmania to be an island. After experiences upon the eastern coasts, he brought out the good ship *Investigator*, and, naming prominent features of the coast from the Leuwin to near Eucla, discovered all the prominent points along the shores of South Australia from her western boundary to Encounter Bay. Spencer's and St. Vincent Gulfs were first seen and explored by him. Flinders, too, it was, who first saw and named Mount Lofty, under the shadow of which now nestles the fairest city of Australia, Adelaide. Now 'twere a fitting time, in this our year of jubilee, for South Australia to

dedicate some worthy and lasting memorial in honor of the man who did so much, and in whose memory we have done so little.

Sturt discovered the great Australian rivers, the Darling and the Murray. His marvellously adventurous trip in an open whale-boat down the tortuous Murray river, seeking a highway to the sea, has never yet received the attention the deed merits. The lamented Leichardt, whose unsolved fate forms to-day one of the most extraordinary problems of geographical adventure, sought to pierce the continent from Sydney to Swan River. Eyre, after good work at the head of Spencer's Gulf, made himself renowned by his famous "march by the sea" to Western Australia.

Now we have John McDouall Stuart, peer of Australian explorers, whose determined attempts to cross the continent resulted, in his sixth expedition, in well earned victory. In 1860, on his second journey, he discovered Central Mount Stuart, in the heart of the continent, planting upon its crest the British flag. And so, from the centre to the sea the 'proud flag waved exultingly.' In October, 1861, John McDouall Stuart started on his sixth expedition, being his final and victorious march for the Indian Ocean. There were with him, William Kekwick, second officer, since dead; F. W. Thring, third officer; W. P. Auld, assistant; Stephen King, John W. Billiatt, all living; James Frew, dead; Heath Nash; John McGorrerey, shoeing-smith; F. G. Waterhouse, naturalist; still living. After many baffling experiences and great hardships, Stuart, on the 25th July, 1862, reached the Indian Ocean in Van Diemen's Gulf, after, in his own words, "having crossed the entire continent of Australia from the Southern to the Indian Ocean, passing through the centre." The grand flag was raised anew on the ocean sands of Northern Australia, and Stuart's triumph was complete. He had proved that central Australia was not the useless desert country it had been represented to be, he having found good grazing country right away through. No higher testimony is needed, nor can be given, that Stuart did his work wonderfully well, than the fact that his track across Australia is now marked out by the transcontinental telegraph line which binds us to the old world; and further, that the route of the great Australian transcontinental railroad follows the footprints left by him. Nor can any better route be found. In connection with Stuart's great exploit, the names of James and John Chambers should be recorded; for these were the men who stood by him in his earlier endeavors, and, but for their aid, his great achievement

must have been long delayed. Honor is due also to the South Australian Government for supplying the needed assistance for the last and successful expedition.

Mr. A. C. Gregory, at this juncture, led an expedition which made valuable discoveries in North Australia; and later, along the Barcoo, and Cooper's Creek. In 1860, also, the famed and lamented Burke and Wills expedition, of Melbourne, started on their terrible, but successful journey to the Gulf of Carpentaria, the leaders dying at Cooper's Creek, through being forsaken by the party in charge of their stores. John McKinlay, having been sent with a relief party to find Burke and Wills, traversed the continent from Cooper's Creek to the Gulf of Carpentaria. Ernest Giles led an expedition in 1862, to Lake Amadeus, and the Rawlinson Ranges, barely escaping with his life, in a waterless range of country. The brothers Forrest, of Western Australia, have done marvellous work in the difficult country lying between the overland telegraph line and Western Australia, a region of country thrice successfully traversed by them.

In 1872, through the generosity of two honored and enterprising citizens, the late Sir Walter W. Hughes, and Sir Thomas Elder, G.C.M.G., who still gives ready aid in similar work, an expedition was organised under the leadership of Colonel P. Egerton-Warburton, C.M.G. This expedition marked a new era in Australian exploration, inasmuch as camels were now first employed in transport. The wonderful "ship of the desert" at once demonstrated his superiority over the horse for such adventure, owing to his powers of endurance, and ability to traverse long stages with no water supply, which would be utterly impracticable to the more sagacious, but less hardy "friend of man." In fact, the value of work done in Central Australia by the camel can scarcely be over-estimated. As in Asia and Africa, so here, for long journeys over trying, arid country, the camel has established itself as indispensable and invaluable; yet, strange to say, though forty years ago a gentleman from India pointed out the adaptability of the camel to such purposes in Australia, it is only comparatively recently that he has come into use. Colonel Egerton-Warburton carried on work in the north-west. He barely escaped from the desert with his life; but, thanks to the efforts and attention of the late J. W. Lewis, we have the aged and honored leader still in our midst.

Such are the leading facts respecting work done for geographical science in Australia up to the date of the inauguration of the

Geographical Society of Australasia. Her Majesty Queen Victoria has since been pleased to grant her gracious patronage, and to permit the assumption of the title "Royal," by the society. To encourage, and assist in every way possible the interests of geographical science, is the purpose of the society, as set forth in the statement of "objects" in its constitution. These are as follow:—

- I. Scientific—The advancement of geographical science, the study of physical geography, and the exploration of Australasia, with the islands and seas adjacent thereto, to obtain information upon their physical features, fauna, flora, and geological formation, &c.
- II. Commercial—The study of commercial geography, the natural and artificial products, and the manufactures of various countries, to promote commerce.
- III. Educational—The dissemination of knowledge of physical, commercial, and political geography among all classes, by means of illustrated public lectures, and publications.
- IV. Historical—The collection and publication of historical records of geographical interest, and of memoirs of notable men of Australasia.
- v. The compilation, from reliable data, of the geography of Australasia.

Very much of results attained, and of work accomplished by some of the explorers named, yet remains unwritten. The deeds, too, of others who, though not so prominent, have done good service in the interests of geographical science, are still, to a considerable extent, unrecorded. Thus many facts of value are still unrescued. Great gaps, too, still appear upon the map of Australia, showing regions as yet unexplored, showing work to be done, and problems to be solved in our great island-continent. Lying near to our northern coasts, is the, as yet little known, island of New Guinea. Expeditions for the exploration of this "wonderland" have been equipped and sent out under the auspices both of the Royal Geographical Society of England, and also of the Australasian section. Further attempts are immediately to be made to traverse that island across the inland heights, from sea to sea. A scheme for the further exploration of the Antarctic regions is before the public. Such an expedition would doubtless succeed in solving scientific problems of exceptional interest.

Australians realise that investigations into the mysteries of the great Antarctic realms come rightly within the sphere of dwellers beneath the southern cross, and by the great southern sea.

Mr. David Lindsay, explorer, has recently returned from a journey into new country to the N.N.W. and N.W. of Adelaide. He has made discoveries on the Finke and Macumba rivers, having found the point of junction of these streams, northward of Lake Eyre. The record of these is now passing through the press. Mr. Charles Winnecke, equipped by Sir Thomas Elder, G.C.M.G., who had formerly accomplished good work in the mid-northern wilds, has recently been out to the westward into new country. Thus, gradually the unexplored regions are becoming more and more restricted in area. Lake Amadeus, to the north and west of the Musgrave Ranges, in latitude 24° S., is still undefined as to its northern and western shores; nor is it known what waters, if any, may flow into it in these directions. Yet farther to the north and to the west of Powell's Creek, lie large tracts of, so far, untraversed country, being bordered to the north-westward by the now famous Kimberly gold districts.

It is fitting here to give the honor due to Mr. G. W. Goyder, F.R.G.S., Surveyor-General to South Australia, who did valuable exploring work in N.E. North Australia, and who, for many years has been the able chief of his department. His energy, and his thorough knowledge of the country, have enabled him to further for South Australia, more than any other man, the general interests of geographical science.

The Royal Geographical Society of Australasia is very desirous to become possessed of as much information as possible of geographical interest. Any records of early discovery upon these coasts by American or other whalers, notes from logs of vessels which visited these shores prior to European settlement; all such information would be of highest value for preservation in the annals of the society, in so far as they treat of discoveries made upon these shores.

The aboriginal wanderers over our wide Australian wilds claim and merit our attention. These dusky children of the soil will soon have passed away, and we shall then find left with us but meagre record of their race. Now, whilst they are with us, or whilst we have in our midst men who long ago met them in their primitive estate, is the time to rescue information which, if un-rescued now, will prove lost for ever. The names of their tribes,

nomenclature of their country, the boundaries of their tribal territories, their language, their customs respecting birth, manhood's estate, marriage, hunting, and religious observance; their traditions, superstitions, social distinctions, festivals, funeral rites, burial, laws of marriage, property, war; modes of manufacture, and use of clothing, canoes, utensils, nets, ropes, colors, ornaments, weapons, barter, knowledge of astronomy. The opportunities to rescue such information grow daily less. Only three representatives of the once numerous and intelligent Adelaide tribe remain. The Encounter Bay, and lower Murray River (Narinyerrie) tribes, too, have well nigh passed away. Contact with the "pale-face" has, as seems inevitable, "civilized" the aboriginal race off the soil that once knew him.

The early struggles of pioneers and settlers are, to a considerable extent unknown, because hitherto unwritten. The origin and history of names of localities, with some sketch descriptive of founders of interesting settlements, should all be gathered in before the only persons who are cognizant of the facts pass away from us.

Should any visitor to our Jubilee Exhibition be in a position to supply or to obtain items of historical interest, such would be placed in permanent form in the "Proceedings" of the Society, if sent to its honorary secretaries.

Educational.—The Society proposes to compile, publish, and disseminate accurate information upon Australian geography, by means of maps and books of geography for use in schools, not alone in our own country, but also in those of the old world, that so may be imparted far more accurate ideas of what Australia really is. For instance, wide stretches of country formerly shown on maps of Australia, and spoken of in geographies as "desert," are now in reality, feeding ground for countless herds of horses and cattle, and for thousands of head of the producers of our now world-renowned "golden fleece." Other lands here once termed "desert" will, ere long, be rich in the yield of the olive, vine, mulberry, orange, almond, apricot, fig, and other fruits and growths, destined for the tables of our brothers and cousins in the far away homes of "old England." People dwelling in that "old home" have yet much to learn of the Australia under the southern cross; this Society is engaged in the work of diffusing this information.

In addition to the Royal Geographical Society, the local institution has interchange of publications with the societies of

France, Germany, Italy, Scotland, America, Mexico, Japan, and others. There are some 400 members of the Society in Australia, ninety of these in the South Australian branch. The Society's rooms in Adelaide are at No. 27, Waymouth-street; in Melbourne, Victoria, at No. 15, Market Buildings, Collins-street west; also branches at Sydney, New South Wales; and Brisbane, Queensland. The honorary secretaries will be glad to give or to receive information of geographical interest.

Volumes of the Society's "Proceedings," published annually, may be had at the Government Printing Office, Adelaide.

THE RAILWAYS.

Great facilities for intercommunication by means of railways exist to and from all the principal centres and ports of the colony, and to a distance of 442 miles from Adelaide to the interior; in addition to which 207 miles are under construction towards the centre of the continent. Further lines are still in contemplation, and it is hoped that, in comparatively a few years, a railway will extend across Australia from south to north, from Adelaide to Port Darwin. With the latter aim in view, already 146 miles are in course of construction from Palmerston on the north coast, so as to meet the southern section on its extension northwards, and thus form an iron road from the Southern Ocean to the Gulf of Carpentaria.

The last portion of line opened in this colony has placed Adelaide in direct railway communication with Melbourne and Sydney, and, with the exception of crossing the Hawkesbury river, a bridge over which will be completed in two years; on the completion of two short lines, one from Sydney to Newcastle, and the other from Tenterfield to Wallangarra, lines will connect the capitals of four of the principal Australian colonies, South Australia, Victoria, New South Wales, and Queensland, which will enable travellers to any or either of the latter colonies to cut short their sea passage by landing at Adelaide, and completing their journey by rail.

The summary of the railway returns for the year is as follows:— On the 30th June, 1886, there were 1,211 miles of railway open for traffic, of which 487 were on the 5ft. 3in. gauge, and 724 on the 3ft. 6in. gauge. Owing to the exceptionally depressed condition of the colony for the last few years, because of drought, the traffic returns for the last year are very low. The total tonnage of goods conveyed was 742,942 tons. The total number of passengers conveyed was 3,961,650, composed of 685,940 first-class, 1,852,066 second-class, and 1,423,644 third-class; the third-class passengers were on the Port line only. Of the whole number of passengers, 17·31 per cent. were first-class, 46·75 per cent. second-class, and 35·94 per cent. third-class. The earnings per train mile were 67·52

pence, and the cost per train mile 45·57 pence. The earnings from the railways amounted to £549,092, and the working expenses to £370,654 7s., or 67·50 per cent. of the revenue. The net profit was £178,438, equal to 2·37 per cent. on the capital invested in lines open for traffic, which is £7,533,500.

MAIN ROADS.

Length of Main Roads in South Australia, June, 1886.

District.	Made.	Unmade.	Total.
	Miles.	Miles.	Miles.
Central	741	362½	1,103½
Midland	240	191	431
North Midland	154	251	405
Northern	104½	476½	581
Flinders	141	286	427
Peninsula	353	177	530
Victoria	172½	100½	273
Albert	214	163	377
	2,120½	2,097	4,127½

Approximate Amount Expended on Main Roads.

	£	s.	d.
From January, 1852, to June 30th, 1886	4,038,267	9	5
To June 30th, 1887	54,010	0	0
	<u>£4,092,277</u>	<u>9</u>	<u>5</u>

Prior to 1852 the records are not reliable, as the separate expenditure on roads cannot be traced.

MARINE DEPARTMENT.

The Port Adelaide river or creek was discovered in 1836, when Colonel Light was Surveyor-General, and was first navigated by Lieutenant Pullen, who declared it to be the natural harbor for the City of Adelaide.

In the earliest days of the colony, masters of vessels used to send their boats ahead to ascertain the depth of water on the bar before venturing to cross. About 1843 pilots were appointed, and an efficient service has since been maintained at Port Adelaide, the only port in the colony where pilotage is compulsory. Masters of intercolonial owned vessels may however become exempt.

Before any money was expended on deepening operations, the depth of water on the outer and inner bars was about $8\frac{1}{2}$ ft. at low water, and vessels therefore had to wait until spring tides, and lighter before being able to cross the bar. Even then they often took one tide to cross the outer bar, and then had to anchor until the next tide, before crossing the inner bar.

Although the earliest expenditure for improving the Port Adelaide creek was in 1849, the plant at the disposal of the authorities was very limited and primitive, and little improvement was actually effected up to 1876, as compared with what has been done since. The total quantity of silt raised in 27 years, to the end of 1876, was 1,154,576 cubic yards, whereas the quantity raised in the following ten years, to the end of 1886, was 3,393,656 cubic yards, making a total of 4,548,232 cubic yards.

At the present date, there are three first class dredgers constantly at work improving the Port Adelaide river and harbor. The total amount provided to the end of 1886 was £743,106, and the estimated value of the plant is about £240,000, including the plant employed at the various outports and charged to the Port Adelaide deepening loan.

From the harbor to the outer bar is about nine miles, and the whole of this distance, with the exception of about $1\frac{1}{2}$ miles in Light's passage, has been deepened.

At the outer and inner bars a depth of about $11\frac{1}{2}$ ft. has been entirely removed, and in some parts of the harbor, where it was

formerly dry, there is now a depth of 22ft. at low water. The channel from the harbor to the anchorage is 250ft. wide, with 20ft. at low water, or 28ft. at high water, with the exception of a small portion which has 18ft at low water and 26ft at high water. This is however now being deepened by the dredgers, and will be completed before the end of the present year. The channel is well lighted with thirteen beacons, so that steamers, &c., can go up or down at any time, night or day.

A self-registering tide gauge is erected at the dockyard which records the height of the water at any hour night or day, and returns are published for the information and guidance of persons interested; the highest tide known at Port Adelaide rose 12ft. above low water datum. This would give 32ft. of water in the present channel.

About thirty ocean cargo steamers came alongside the wharves in the harbor during 1886, the largest being the s.s. *Hankow*, 2,332 tons register and 389ft. long. The deepest draught was for the s.s. *Hubbuck* drawing 21ft. 6in., and the largest cargo taken out in any one vessel was 4,240 tons, shipped by the s.s. *Port Pirie*, which was in the Port five days.

Most of the ocean-going passenger steamers which trade with Australia call at Port Adelaide, but do not come up the river; they find convenient and safe anchorage at what is known as the Semaphore, which is connected with Adelaide by rail. Mails for all the colonies except Western Australia are landed there, and forwarded by train to Melbourne.

The total length of wharfage accommodation in Port Adelaide is 13,626ft., or $2\frac{1}{2}$ miles, and of this the Government own 3,438ft. Railway lines, water, and gas are laid along nearly all the wharves, and the depth of water alongside varies from 16ft. to 24ft. at low water.

Cranes capable of lifting 25 tons, and patent slips which can accommodate vessels from 400 to 1,500 tons register, have been provided, and a dry dock of sufficient size to take in some of the largest ocean steamers is being constructed by private enterprise.

Thirty lighthouses have been erected, six first order, two second order, three third order, and the remainder from fourth to sixth order. The total cost of these was about £155,000. Kerosine is consumed in nearly all the lighthouses, and about 11,000 gallons a year are used. The cost of maintaining the lights is about £8,500 per annum.

Some of the lighthouses are connected by cable or telegraph, and several signal stations have been established from which passing vessels may communicate with Adelaide, and thence with nearly all parts of the world.

The total number of wharves and jetties provided by the Government for different parts of the colony, including the Northern Territory, is 67, the longest being 5,530ft., and another, a screw-pile structure 4,000ft. long. The total cost of these wharves and jetties was about £600,000.

There are three lifeboat stations, and nine stations supplied with rocket apparatus for saving life.

Between 4,000 and 5,000 seamen are shipped and discharged every year in this port alone, where a Sailors' Home has for several years provided for the accommodation of mariners.

The shipping of the colony in 1885, exclusive of the coast trade, was 1,072 ships of 893,092 tons register inwards, and 1,091 ships of 913,950 tons outwards, or a total of 2,163 vessels and 1,807,042 tons register.

Port Pirie, near the head of Spencer Gulf, is the principal port in South Australia for the export of wheat. At present vessels drawing 18ft. to 19ft. can go down the river at high water spring tides, the highest tide registered in 1886 having been 24ft. at high water. The creek is lighted up with beacons, so that vessels can go in or out at any time, and wharves are provided.

Port Augusta is situated at the extreme head of Spencer Gulf, and is the principal port for the export of wool from the interior of South Australia, and parts of Queensland.

Deepening operations were commenced in 1881. The total sum provided is £51,228, which has been spent, and 745,399 cubic yards of silt have been raised. Before deepening operations were commenced there was only 11ft. of water in the shoalest place. There is now a channel nowhere less than 150ft. wide, with 18ft. at low water right up to the wharf.

A new Government wharf, about 1,200ft. long, with 22ft. at low water, has been constructed. There are other jetties, some of which have 14ft. at low water alongside.

The channel to the harbor is well marked with buoys and beacons, and the harbor itself is perfectly safe and commodious, and has a depth of 20ft. to 29ft. at low water.

Other principal ports of export are Glenelg, Kingston, Wallaroo, Port MacDonnell, Port Victor, Port Beachport, Port Victoria, and Port Germein.

MUNICIPAL INSTITUTIONS.

By the Imperial Act of William IV. creating South Australia into a British province, provision was made for the establishment of a municipality in the metropolitan city so soon as the population numbered 2,000 souls. The first sale of city lands took place in March, 1837, and, in little more than three years thereafter, the first Colonial Municipal Act was passed (August, 1840), providing for the election of a common council of nineteen members for the City of Adelaide.

The elections to fill the municipal offices took place on the 31st October, 1840, the first mayor being the late Sir James Hurtle Fisher. Adelaide has the proud reflection of being the parent of municipal institutions in the Australasian colonies. The first city assessment was estimated at £80,000, and the rate declared, at fourpence in the £, produced only £1,333 6s. 8d.

The limits within which this paper is to be confined precludes the possibility of giving an historical retrospect of the exceptionally interesting events which have led to the building up of so beautiful a city as now offers itself at this jubilee time for the admiration of visitors to the International Exhibition now being held within its boundaries. The sales of city lands in 1837 yielded a sum of less than £4,000; the estimated value of real property in 1887, fifty years after the foundation of the city, amounts to £11,000,000. Land which in 1837 sold at the rate of three farthings a foot frontage to a main street, by a depth of 210ft., is now worth from £400 to £500 a foot in the same street and for the same blocks, but only for half the depth.

In 1837 there were only fifty-one streets in the city, none less than 66ft. wide, some 100ft. wide, and others 132ft. wide; there are now (1887) 270 streets, measuring in length a little over eighty miles. All these streets are macadamised, the watertables paved, and the footpaths kerbed. The footpaths in the principal streets vary in width from 10ft. to 20ft., some of them being flagged with marble, whilst those in the narrower streets are not less than 4ft. wide. Thirty-two roadways, measuring thirteen miles in length, cross the park lands in all directions, supplying means of com-

munication with the suburbs and the country districts ; whilst, for the greater convenience of pedestrians, there are no less than sixty well-made footpaths, twenty-six miles long in the whole, crossing and recrossing all parts of these beautiful parks.

The municipal government of the city is vested in a mayor, six aldermen, and twelve councillors. The elections are held on the 1st December in each year, when the mayor and two aldermen retire, and their successors are elected by the whole body of the ratepayers. There are six wards, each represented by two councillors, one of whom retires on the same date as above, and his successor is elected by the ratepayers of the ward ; thus there are always nine candidates to be elected for the council, viz., mayor, two aldermen, and six councillors. The swearing in of the newly elected candidates generally takes place on the 2nd December.

At the present time the annual valuation of real property for ratable purposes amounts to £520,000 ; but, in consequence of the depressed times, the council have reduced the total value by 35 per cent., and rates are now collected on the reduced amount. These are as follows :—A city rate for general purposes of 1s. in the £, a health rate of $1\frac{3}{4}$ d. in the £, a lighting rate for street lamps of 4d. in the £, and a park lands rate of $\frac{3}{4}$ d. in the £, making a total rate of 1s. $6\frac{1}{4}$ d. in the £ for civic purposes. There are, however, other rates collected by the Government, in payment of water and drainage works, of 1s. and 8d. in the £ respectively. In addition to the income from rates, the City Council has extraneous sources of income, which vary with the times in prosperity or depression, from £13,000 to £16,000 a year, out of which the salaries of the officers, interest on bonded debt, and various other accounts are paid. The bonded debt of the corporation at the present time is less than £80,000, whilst the value of the real property belonging to the corporation is £250,000.

The Corporation has provided for the public convenience three massive iron girder bridges over the Torrens at a cost of about £32,000. A weir has been erected across the Torrens at a cost of £15,000, which impounds the waters and provides a lake varying in width from 100ft. to 500ft. ; in depth, from 20ft. to 2ft. ; and in length two miles, which is much availed of for aquatic sports. The whole of the park lands under the control of the Corporation, equalling about 1,750 acres, have been planted and fenced under the direction of the City Council ; nearly every tree and shrub on these extensive and charming healthful resorts has been put in at

the expense of the Corporation since 1855. Over the weir an iron lattice girder bridge has been erected, from which a capital view of the beautiful lake can be obtained.

The city is well lit with gas at a cost of about £6,000 a year; furnished with an abundant and constant supply of water; and with a system of underground drainage which renders it the most delightful place of residence in Australia. The present condition of the city of Adelaide reflects the highest credit on the ability and enterprise of the civic authorities, and also exhibits in a marked degree the readiness with which the citizens have subscribed the necessary funds for carrying out the requisite public works.

In addition to the municipal institutions of the city, there are thirty other municipal corporations, incorporated as follows:—Kensington and Norwood in 1853; Port Adelaide, also Glenelg, 1855; Gawler, 1857; Brighton, 1858; Kapunda, 1865; Strathalbyn, 1868; Unley, 1871; Goolwa, Moonta, and Kadina, 1872; Hindmarsh, Wallaroo, and Port Augusta, 1874; Mount Gambier, Port Pirie, Burra, and Clare, 1876; Jamestown, 1876; Yorketown, 1879; Port Wakefield, 1881; Edithburgh and Laura, 1882; Quorn, Gladstone, St. Peters, Thebarton, Semaphore, and Maitland, 1883; and Petersburg, 1886. The population included in these municipal corporations equals more than one-third that of the whole colony, being 105,000. The annual value of ratable property within their bounds amounts to £1,005,440, and the gross value to £20,100,000; their total bonded debt does not exceed £160,000, whilst the value of their real estate amounts to double that sum, or £325,000, and their annual income to £120,600 for 1886. The number of gentlemen comprised in these municipal councils is 238.

The Municipal Corporations have established a Municipal Association "whose objects are to watch over and protect the interests, rights, and privileges of Municipal Corporations; to take action in the relation to any subject affecting Municipal bodies or Municipal legislation; and to promote the efficient carrying out of Municipal Government throughout the colony." The governing body of the Association comprises a President, Vice-President, Treasurer, and Secretary, with Executive Council.

The subscription is £5 5s. per year. The Executive Council meets once a quarter, or oftener, on the summons of the President, if the exigencies of business require their attention. To the ability, watchfulness, and forethought of this body is to be attributed the enlarged powers already obtained by Municipal

Corporations, and the greater attention which is given to their representations to Parliament or Government on matters affecting their powers or responsibilities.

Besides Municipal Corporations there are other local governing bodies designated districts, of which there are 121 in the colony, governed by district councils. Each council elects from its own body its chairman at the first meeting after the annual elections, and the powers granted to these councils are somewhat analogous to those of Municipal Corporations. This form of local government was introduced by Governor Sir Henry E. F. Young in 1853. They have charge of all the roads (not being main roads) within their respective districts, and all other public matters of a kindred nature. Power is given to levy rates up to one shilling in the £. These local bodies have, in the aggregate, supervision over an area equal to 9,826 square miles of country, their population numbering 124,112 (census 1881), their total incomes amounting for 1884-5 to £99,343. The annual assessment of property is set down for the whole at £1,105,414 for the same period, representing a gross value of £22,108,000. The number of members in the several councils make a total of 614, the average number for each council being about five. Under the term of "District Chairmen's Association" representatives from the councils meet at some central point at stated periods during the year for the consideration of matters affecting their rights and powers, and for the arrangement of conjoint action whenever it may be deemed necessary, in a similar manner to that of the Municipal Association.

There are three drainage districts, governed by drainage boards consisting of five members each, with powers somewhat similar to those of district councils in respect to assessments and rating. These are located in the south-eastern part of the colony, where their efforts have won from the swamps large tracts of valuable land suitable for agricultural purposes. These three boards have an area of country under their administration equal to 229 square miles, and their revenue for 1885-6 equalled £4,318. These boards have the care, control, and management of all district drains, and all drainage works within their respective districts, and under their directions all such drains are cleansed, repaired, and maintained in a state of efficiency at the expense of the Boards.

Under the control of the Hon. the Commissioner of Public Works are other quasi municipal bodies entitled, "Road Boards," of whom there are eight, having control over 4,131 miles of main

roads, the expenditure on which during 1885 amounted to £181,306. Road Boards are supplied with funds by Parliament (not having power to levy rates for road purposes). These roads branch out in all directions from the City and illustrate in a striking degree the excellent principles on which the roads are made, as well as the watchfulness and care exercised by these Boards in the proper and due discharge of their onerous duties.

Too much praise cannot be awarded to the unpaid representatives of the people in these various local governing bodies, who, whilst exercising the strictest economy in the expenditure of the funds under their control, yet give such splendid results as the efforts of their forethought and attention.

PUBLIC LIBRARY.

The Public Library contains at the present time about 24,000 volumes; in which the Proceedings and Transactions of Societies, and scientific and literary periodicals of a high class, are well represented. It is so far mainly an English Library, although it includes to a moderate extent the literatures of other languages, ancient and modern. It is open to the public on week days from 10 a.m. to 9 p.m., and on Sundays from 2 to 6 p.m.

Readers have free access to the bookshelves, the collection of bound newspapers being the only part of the Library which is placed under any restriction. During the year ending June 30th, 1887, the number of readers was 80,447.

READING ROOM.

There is a public reading-room in the Institute building, which is distinct from the Public Library though under the same management. It contains English and Colonial newspapers, most of the leading English periodicals, and a few American and French ones. It is open from 9-30 a.m. to 9-30 p.m. There are no means of registering the attendance, but there is little doubt that it is larger than that in any other department of the institution.

MUSEUM.

The Museum is open on week-days from 10 a.m. to 6 p.m. in summer, and 5 p.m. in winter. The number of visitors during the year ending June 30th, 1887, was 71,298.

The principal departments of the Museum are mammals, birds, and reptiles mounted, and birdskins unmounted, articulated skeletons, spirit preparations; also reptiles and fishes in spirit, fossils, minerals, and shells. The minerals are properly arranged and labelled; the shells are now in course of arrangement.

Unfortunately the space appropriated to the Museum is very limited; it is consequently so crowded that classification is impossible except as regards the minerals and shells.

ART GALLERY.

The Art Gallery is open from 10 a.m. to 5 p.m. in summer, and 4 p.m. in winter. It contains 54 oil paintings, 1 water-colour drawing, 4 marble statues or busts, and 4 casts. The number of visitors for the year ending June 30th, 1887, was 63,856.

INSTITUTES.

The number of urban, suburban, and country institutes affiliated to the Public Library is 136.

Boxes of English and German books are circulated among them; these are sent out from the Public Library, and the circulation is managed by its officers, but the books are not taken from the Public Library—they are a distinct collection.

The principal statistics of the Institutes for the year ending June 30th, 1886, were as follows:—

Volumes in libraries, 114 institutes, 107,303; members, 114 institutes, 5,876; volumes circulated, 114 institutes, 182,565; incomes, inclusive of Government grants, 114 institutes. £10,664 14s. 10d.

SCHOOLS OF PAINTING AND DESIGN.

These schools are held under authority of the Board of Governors of the Public Library, Museum, and Art Gallery. The School of Painting, under Mr. L. Tannert, formerly of Dresden and Dusseldorf, contains forty-five students, who are receiving an artistic education in painting from nature, antique, and life. The School of Design, under Mr. H. P. Gill, of South Kensington, assisted by Mr. G. A. Reynolds, late of Birmingham, numbers about 150 students. The studies embrace a geometric foundation, and are carried on through the various grades of drawing, and include decorative painting, drawing from the antique and the life; all the work is done with a view that the students shall use their studies as a means to the working out of original and artistic designs. In the evening there are large artisan classes who receive an education in practical drawing, classes in machine and building construction, under Mr. R. A. White and Mr. J. G. Beaver, and a small class in practical pottery, under Mr. G. Bosley, to instruct artisans in throwing and turning upon the wheel. Experiments are being made in burning glazed and colored pottery prior to the erection at the schools of a pottery kiln.

Examinations are periodically held in art, and certificates of the first and second grades are granted to successful candidates. State school training teachers are instructed at this school, and are certificated as competent to teach drawing in the State schools.

ROYAL SOCIETY OF SOUTH AUSTRALIA.

The Royal Society of South Australia is affiliated with the Public Library, Museum, and Art Gallery of South Australia. The objects of the society are, the diffusion and advancement of the arts and sciences by the meeting together of the members for the reading and discussion of papers connected with the above subjects, and by other approved means.

The society consists of fellows (117), honorary members (11), corresponding members (14), and associates (2).

The management of the society is conducted by a council, consisting of a president, two vice-presidents, a treasurer, a secretary, and six other members.

THE UNIVERSITY.

The University of Adelaide dates from the year 1872, when Sir Walter Watson Hughes, of Torrens Park, invested in trustees the sum of £20,000 to found an University. This magnificent donation was further increased, in the year 1874, by Sir Thomas Elder, of Birksgate, who gave a like sum of £20,000 without conditions. Subsequently the Hon. J. H. Angas presented the University with a sum of £6,000, to found a Chair of Chemistry, and Sir Thomas Elder paid over to the University a sum of £10,000, to assist in forming a Medical School.

A Chair of Music was founded for five years, by subscription by prominent citizens, amounting to £530 a year, and to this fund Sir Thomas Elder subscribes £300 annually.

The John Howard Clark Scholarships, £30 a year each, tenable for two years, eligible for those students who have completed the first year of their course of B.A., were established in 1882; the Commercial Travellers' Association Scholarship in 1879; and the Stow Prizes of £45 in 1883.

Mr. John Howard Angas established the Angas Engineering Scholarship of the value of £200 a year, tenable for three years.

The number of undergraduates in the various courses for the session of 1886 was 108, and of non-graduating students, 89.

Facilities exist for the courses of law, medicine, science, arts and music, and evening classes have been established in English literature, mineralogy, French, and German. The professors of Greek, mathematics, geology, and Latin also conduct evening classes for the benefit of students.

<i>Endowments.</i>	<i>£</i>
Sir W. W. Hughes.....	20,000
Sir T. Elder	20,000
Sir T. Elder	10,000
Mr. J. H. Angas.....	6,000
Gosse Fund	800
Stow Prizes	500
J. H. Clark Scholarship.....	500
*Sir T. Elder	1,000
*Australian Literary Societies Union	220

£59,020

On this amount of £59,020 Government pay 5 per cent. annually, by Act of Parliament, which amounts to £2,951. The Government have also endowed the University with 50,006 acres of land.

* Evening.

PUBLIC EDUCATION.

In the early days of the colony a school was built on North-terrace, and a teacher appointed to conduct it on the principles of the British and Foreign School Society. Beyond this little was done until 1847, when Ordinance No. 11 was passed, under which a capitation grant was paid to schools established by private persons. This was repealed by Act No. 20 of 1851, which came into operation on May 1st, 1852.

Its aim was to introduce and maintain good secular instruction based on the Christian religion, apart from all theological and controversial differences. The system was under the control of a Central Board of Education, consisting of seven members appointed by the Governor.

The Board granted licences to teachers, and salaries ranging from £40 to £100 per annum. An inspector of schools was appointed, and District Councils were authorised to visit schools and report thereon to the Central Board. Schoolhouses were built by local subscriptions, subsidised by the Government to the extent of £200.

It having been found that the requirements of the colony were not met by the system, a fresh Education Act was passed in the year 1875, during the premiership of Mr. (now Mr. Justice) Boucaut. By this the management was entrusted to a Council of Education, with a salaried president; but the arrangement did not work satisfactorily, and an Amending Act, passed in 1878, transferred the responsibility to a Minister of the Crown.

The principal features of the system now in force are as follows :—Education is secular (with permissive Bible-reading before morning school) and compulsory; fees are charged when the parents are in a position to pay them, but are remitted in other cases; buildings are erected by the State when there is satisfactory proof of a permanent average attendance of not less than twenty; when erected they are cared for by local Boards of Advice appointed by the Governor, and attendance is enforced by the same bodies; grants of land are annually made as educational endowments.

The regulations made by the Minister Controlling Education begin as follows:—"The object of the education system is to "develop the intellectual and moral faculties of the children. It is "not sufficient merely to give instruction, but the aim of every "teacher should be to train his pupils in habits of cleanliness, "industry, punctuality, obedience, truthfulness, honesty and consideration for others. The discipline of each school should be "based on the strictest justice in the relations between master and "scholars, as well as between scholars themselves; and all teachers "should remember that their own example exerts the most powerful influence in moulding the characters of their pupils."

The general management under the Minister is entrusted to the Inspector-General of Schools, who is assisted by a staff of six inspectors. These gentlemen visit the schools twice a year, making a careful examination into their general condition and the progress of the individual pupils. A small portion of the salaries of teachers depends upon the results of the examination, but this amount does not exceed £24 per annum for men and £16 for women.

The schools are of two kinds—public and provisional. The former have an average attendance of twenty or more, and are in charge of certificated teachers. Provisional schools are to be found as a rule in the thinly-populated districts, and are taught by uncertificated persons—principally young women. In 1876 there were in all 281 schools, with 25,889 individual scholars on the books, and an average daily attendance of 13,622; ten-years after (1886) there were 594 schools, 44,405 children under instruction, and exactly 28,000 in average daily attendance.

The curriculum includes reading, writing, spelling, arithmetic (mental and slate), geography, grammar, composition, English history, drill, and (for girls only) needlework. In the year 1885 an amended programme of instruction was issued, with the object of bringing the work more into harmony with the results of modern thought on education; but space is too limited to enter into detail, and those who are interested in the question may be referred to the Education Regulations themselves. The department has found it necessary to prepare in the colony some of the maps, diagrams, and books required in the schools, and specimens of the work may be seen in the Exhibition.

The teachers are trained for their work at a central institution in Adelaide. About 380 persons have passed through this college

since its foundation. Students have generally shown by sound and careful teaching that they have profited by their advantages.

The salaries of the teachers employed in public schools (including fees), vary from £110 to £450, in the case of men, and from £70 to £250 for women. Provisional teachers receive from £60 to £100 per annum, including fees as above. Six weeks' holiday are allowed during the year. In reference to the discipline of the schools it may be stated that corporal punishment is discouraged, and may not be used at all to girls except under special authority.

By a system of exhibitions and scholarships the way is opened for deserving pupils to pass from the primary to secondary schools, and thence to the University. Six exhibitions are annually offered for competition among the pupils of the Government schools; they are tenable for three years, and are of the value of £20 per annum for those who attend the secondary schools as day boys, and £40 in the case of boarders. Besides these, three University scholarships are open yearly. The successful candidates receive £50 annually for three years if they become students at the University of Adelaide and pass their examinations satisfactorily.

Since the passing of the present Act 234 school buildings have been erected, at a cost of £378,906 14s. The expenditure from the general revenue during 1886 was £90,767 11s. 5d. on primary, and £1,496 6s. 7d. on secondary education; these amounts represent the net cost to the country, fees paid into the Treasury being deducted from the gross expenditure. Besides this, £4,341 6s. 4d., was spent on buildings. From the rent of dedicated lands (endowment), £13,014 2s. 8d. was received; altogether, 320,120 acres of Crown lands have been set apart.

Some attention is being given to industrial (technical) education. A Board is at present making careful inquiry into the question. In one part of the country (Wallaroo) school savings banks have recently been established by the Board of Advice. They have already met with considerable success.

NEWSPAPERS.

The newspaper press may fairly claim to be the oldest institution connected with South Australia, as its establishment preceded the actual settlement of the colony. The first number of the *South Australian Gazette and Colonial Register*, now published daily as the *South Australian Register*, was issued in London by Messrs. Robert Thomas and George Stevenson on June, 18th, 1836, prior to the departure of those gentlemen for the new colony, where they published the second number on June 3rd, 1837. The *Register* has, therefore, a record of fifty-one years' continuous publication, and a history of half a century as a purely colonial paper. It has been a daily paper since 1850. The early days of the colony witnessed numerous literary births and deaths. Next to the *Register* the oldest paper existing in the colony is the *Adelaide Observer*, which was established in 1843 by Mr. John Stephens, and soon after associated with the *Register*, since which time the two papers have been conducted by the same proprietary. The *South Australian Advertiser* was established as a daily paper by the late Hon. J. H. Barrow nearly thirty years ago, and it has had associated with it the *South Australian Chronicle* as a weekly paper. These papers were originally owned by a company. They passed into the possession of Messrs. Barrow & King, and are now the property of Messrs. Burden & Bonython. In connection with these papers, in the year 1863, an evening paper was established, which was named the *Express*. At this time there was another evening paper in existence, named the *Telegraph*, which became amalgamated with the *Express*, the latter being called the *Express and Telegraph*. Subsequently an evening paper was issued from the office of the *Register*, named the *Evening Journal*.

Among the newspapers which had a brief history on the colonial stage were the *Southern Australian*, the *Guardian*, the *Chronicle*, the *Adelaide Free Press*, the *Port Lincoln Herald*, the *Adelaide Independent*, *Examiner*, *Southern Cross*, *Monthly Times*, *Mining Journal*, the *Comet*, the *South Australian Times*, and others.

The place of *Punch* is filled in Adelaide by a weekly journal illustrated by lithography and entitled the *Lantern*; the German

population have their *Australische Zeitung*; the interests of the farmers and gardeners, which are also attended to by the weekly papers, are looked after by the *Garden and Field*; the *Sentinel* pays special attention to sporting matters and the needs of the licensed victuallers; the *Christian Colonist*, the *Christian Weekly*, and several denominational organs devote their space to religious news; the *Pictorial Australian* appears monthly, with illustrations of current events. Following is a list of the papers appearing weekly or bi-weekly in the more important country townships:—*Walleroo Times*, Wallaroo, bi-weekly; *Yorke's Peninsula Advertiser*, Moonta, bi-weekly; *Border Watch*, Mount Gambier, bi-weekly; *South-Eastern Star*, Mount Gambier, bi-weekly; *Naracoorte Herald*, Naracoorte, bi-weekly; *Tatiara Mail and West Wimmera Advertiser*, Bordertown, bi-weekly; *Southern Argus*, Strathalbyn, weekly; *Northern Argus*, Clare, bi-weekly; *Mount Barker Courier and Onkaparinga and Gumeracha Advertiser*, Mount Barker, weekly; *Terowie Enterprise and North-Eastern Advertiser*, Terowie, weekly; *Kapunda Herald*, Kapunda, bi-weekly; *Bunyip*, Gawler, weekly; *Agriculturalist and Review*, Jamestown, weekly; *Port Pirie Advocate*, Port Pirie, weekly; *Burra Record*, Koorunga, bi-weekly; *Garden and Field*, monthly; *Sentinel*, weekly; *Areas Express*, Gladstone, weekly; *Port Augusta Dispatch*, Port Augusta, bi-weekly; *Our Commonwealth*, Adelaide, weekly; *Teetulpa News*, Teetulpa, weekly; *Truth and Progress*, monthly; *The Presbyterian*, quarterly; *The Standard* (Import Company of Australasia); *Primitive Methodist Record*, Adelaide, quarterly; *Temperance Herald*, quarterly; *Free Press*, Norwood, weekly; *Catholic Monthly*; *The Times*, Petersburg, weekly; *Northern Territory Times*, Port Darwin, weekly; *North Australian*, Port Darwin, weekly.

POST OFFICE AND TELEGRAPH.

Post Office.

The Post Office and Telegraph Departments in South Australia were amalgamated in 1870, when Mr. Charles Todd was appointed Postmaster-General, in addition to his appointments as Superintendent of Telegraphs and Government Astronomer. A brief sketch of the history of these Departments may not be without interest, as showing the progress of the colony from its foundation in 1836 up to the present year, which celebrates its jubilee.

On the first establishment of the colony, Mr. Thomas Gilbert, the Colonial Storekeeper, was appointed Postmaster, at a salary of £30 a year. The business of the Department was, of course, conducted in a very primitive way; there was no palatial Post Office, but Mr. Gilbert received the mails at his residence on the Torrens, under Montefiore Hill, where they were sorted and delivered, one penny a letter being charged on all letters received and dispatched. This continued until December, 1838, when it was considered necessary to appoint a Postmaster-General (Mr. Henry Watts), with the large staff of one clerk, who also acted as a letter-carrier and messenger. A Post Office Act was passed in the following year, which fixed an inland rate of 3d. on every letter or packet, irrespective of weight or size, but on ship letters only 1d. was charged, to cover gratuity to ships. A post office was opened at Port Adelaide, with a daily mail to and from the city. A fortnightly mail, carried by the mounted police, was established with Willunga and Encounter Bay, where post offices were opened, as well as at Port Lincoln.

Mr. Henry Watts resigned in 1841, and Captain Watts was appointed his successor, in which year there were six post offices, viz.:—Adelaide, Port Adelaide, Port Lincoln, Morphett Vale, Willunga, and Encounter Bay.

The business in 1840 was as follows:—

Number of letters	41,103
Number of newspapers	51,101
Revenue	£232 4s. 6d.

The first ocean mail service with England by steamers was established in 1852, and a contract with the Peninsula and Oriental Co.

was entered into by the Imperial Government for a mail every two months, *via* Singapore, in 1853. This service had, however, to be discontinued during the Crimean war, and steam communication was not re-established until 1857; and then, owing to the failure of the company (European and Australian), not continuously, until the P. & O. Co., under a new contract, commenced a monthly service *via* Mauritius in 1859, the route being altered to Galle in the following year. The mail steamers then did not call at Adelaide, but passed on to Melbourne direct, and South Australia had to maintain, at her own cost, a branch service to King George's Sound until February, 1874, since which date the P. and O. steamers have called at Glenelg. The colony spent, during those thirteen years (1861-74), no less than £191,471 on this branch service.

Postage stamps were introduced in 1855, the denominations being 1d., 2d., and 6d.; and prepayment of postage by means of stamps was made compulsory. Since the Stamp Duties Act, passed in 1886, came into operation at the commencement of this year, adhesive postage and revenue stamps, as they are now called, have been used indiscriminately for payment of postage and stamp duties, and new stamps have been issued up to £20. Thus, there are in use at the present time stamps of the values following:—half-penny, penny, twopenny, threepenny, fourpenny, sixpenny, eightpenny, ninepenny, one shilling, two shillings, two shillings and sixpence, five shillings, ten shillings, fifteen shillings, one pound, two pounds, two pounds ten shillings, three pounds, four pounds, five pounds, ten pounds, fifteen pounds, twenty pounds, besides two sizes of newspaper wrappers bearing the half-penny impressed stamp.

The money order system was introduced on the 1st of January, 1859, when fifteen offices were opened, and the regulations provided for telegraphic money orders, in accordance with a recommendation previously made by the Superintendent of Telegraphs, Mr. Todd.

Continuing the history of the Department, it may be mentioned that Captain Watts retired from the service on June 30th, 1861, and was succeeded by Mr. J. W. Lewis, the Deputy Postmaster-General, who held the position till the end of 1869, when the Department was amalgamated with the Telegraph and Observatory Departments.

It may be well to mention that a new Post Office Act was passed

in 1841, under which letters were charged according to distance, up to a maximum of 2s. 6d., however weighty; and the postage on newspapers was abolished. In 1845, the inland postage was reduced to a uniform rate of 4d. per half-ounce, except between Adelaide and the Port, or those posted in Adelaide for town delivery, which were liable to only half rates. Later on, or in a subsequent Act, a uniform inland rate of 2d. per half-ounce was adopted; and in 1874 the postage to the other colonies was reduced to the same rate. Act No. 214 of 1881, imposed a postage rate of $\frac{1}{2}$ d. on each newspaper, but a concession was made by a subsequent Act, No. 374 of 1886, under which newspapers made up in bundles, could be forwarded by the publishers, and recognised newspaper vendors, at bulk rates of 1d. per lb.

Post cards (1d.) were introduced on December 8th, 1876, and reply cards (2d.) on March 1st, 1883.

The postal notes system came into operation at the beginning of the present year, an Act for the purpose having been passed in 1886. They are of the following value, viz. :—

Postal note	1s. 0d. .. fee	$\frac{1}{2}$ d.	Postal note	4s. 6d. .. fee	1d.
"	1s. 6d. .. "	$\frac{1}{2}$ d.	"	5s. 0d. .. "	2d.
"	2s. 0d. .. "	1d.	"	7s. 6d. .. "	2d.
"	2s. 6d. .. "	1d.	"	10s. 0d. .. "	3d.
"	3s. 0d. .. "	1d.	"	10s. 6d. .. "	3d.
"	3s. 6d. .. "	1d.	"	15s. 0d. .. "	3d.
"	4s. 0d. .. "	1d.	"	20s. 0d. .. "	3d.

When in England, Mr. Todd arranged with the Imperial Post Office for the exchange of a parcel post, which was brought into operation February, 1887, and has since been extended to some other European countries and British colonies. The first parcel post *from* England was, however, received in August, 1886.

The following statistical table will show the growth of the postal service :—

Year.	No. of Post Offices.	Length of Mail Routes.	No. of Letters and Packets.	No. of Newspapers.	Revenue.		
		Miles.			£	s.	d.
1840....	6	278	50,103	50,101	232	4	5
1850....	63	—	266,588	393,177	5,413	9	6
1860....	146	1,837	1,360,341	1,052,077	14,582	8	9
1870....	274	4,459	3,049,818	2,198,477	30,862	6	5
1880....	449	8,901	10,340,772	5,790,768	81,008	14	3
1886....	555	9,883	13,830,452	6,672,013	104,586	12	7

The following table will briefly indicate the progress of the money order branch, made up to the end of 1886:—

Year.	No. of Offices.	Issued.		Paid.	
		Number.	Amount.	Number.	Amount.
1870....	67	13,936	£ 39,663 5 8	11,004	£ 31,773 14 7
1880....	116	39,752	123,461 9 1	26,413	79,822 7 11
1886....	167	62,286	172,630 0 0	62,636	175,018 0 4

With so large a territory, it will be readily understood that the cost of the inland mail services is very great. In 1883 it amounted to £49,404 17s. 8d., the miles travelled being 2,758,846, costing 4½d. per running mile.

The foundation stone of the present General Post Office was laid by H.R.H. the Duke of Edinburgh on November 1st, 1867. It was completed in 1872, at a cost of £53,258 9s. 2d. The old Post Office adjoining (built in 1851), was, until March, 1885, used as a central police station, but the increasing business of the Post Office has led to the premises being since occupied by the money order and stamp printing branches, and also by the postal cashier.

Electric Telegraph.

The first electric telegraph in South Australia was a short line between Adelaide and the Port, erected by Mr. James Macgeorge, at the end of 1855.

Mr. Todd, who, at the instance of the Colonial Government, had been appointed by Lord John Russell as Superintendent of Telegraphs, arrived in the colony in November of that year, with all the necessary plant for telegraph lines to Port Adelaide and the Semaphore, and also to Gawler, the railways to the Port and Gawler then being in course of construction. The telegraph to the Port was opened in February, 1856, and to Gawler in the following year. Telegraphic communication with Melbourne was established in July, 1858, the length of the South Australian section being nearly 300 miles, and the cost £19,403 9s. 0d. Stations in connection with this line were opened at Willunga, Port Elliot, Goolwa, Robe, and Mount Gambier. Sydney was connected *via* Melbourne in October, 1858, Brisbane in 1861, and, in 1867, a direct line of communication with Sydney *via* Went-

worth was completed. In the meantime, the telegraph in South Australia had been extended to Clare, Koorunga, Kadina, Wallaroo, Moonta, Port Augusta, and other places; so that, at the end of 1869, there were 1,642 miles of wire erected, at a cost of £101,591 10s. 3d., and 63 stations.

South Australia's great work in this direction was, however, the construction of the overland telegraph to Port Darwin, a line of nearly 2,000 miles long, carried through the very heart of Australia, then almost, except what we knew from Stuart's journals, a *terra incognita*. The history of this line is so well known that, even if space permitted, it is unnecessary to repeat it here. It was authorised by Parliament in 1870, in order to meet the cable to be laid from Singapore to Port Darwin by the British Australian Telegraph Co. (now the Eastern Extension Telegraph Co.), was commenced the same year, and, in the face of great difficulties, was completed in August, 1872. Mr. Todd, at the time, was on his way back to Adelaide from the north coast, personally superintending the work and arranging the stations, and, at his camp near Central Mount Stuart, with a small pocket telegraph instrument, received and responded to the congratulations of the Governor, the Government, and a large number of persons in this and the neighboring colonies. The cable from Singapore had been laid in November of the previous year, but communication through it was interrupted in July following, and was not restored till October 21st, when, for the first time, the Australian colonies were electrically connected with Great Britain, or, in a word, with the whole civilised world. On the 15th of November, 1872, banquets were held in London, Adelaide, and Sydney, to celebrate the event.

In the first instance wooden poles had to be used, but these have been almost entirely replaced by iron poles; and, up to the present date, the expenditure on this great national undertaking amounts to £492,439 12s. 7d., which includes the cost of stations, and the re-poling with iron poles.

The following table shows the length of the sea and land lines connecting Australia with England:—

	Miles.
Falmouth to Gibraltar, <i>via</i> Lisbon (sea)	1,250
Gibraltar to Malta (sea)	981
Malta to Alexandria (sea)	819
Alexandria to Suez (land line)	224
Suez to Aden (sea)	1,308
Aden to Bombay (sea)	1,664
Bombay to Madras (land)	690
Madras to Penang (sea)	1,213

Penang to Singapore (sea)	381
Singapore to Batavia (sea)	560
Batavia to Banjoewangi (land)	480
Banjoewangi to Port Darwin (sea)	970
Port Darwin to Adelaide, S.A. (land)	1,975
Total	12,425
Total length of cable	9,146
Total length of land lines	3,279
Total	12,425

We have the following stations on the line, commencing north from Port Augusta:—

	Distance from Adelaide. Miles.
Beltana	355
Farina	410
Strangways Springs	545
The Peake	636
Charlotte Waters	804
Alice Springs	1,036
Barrow Creek	1,207
Tennant's Creek	1,354
Powell's Creek	1,467
Daly Waters	1,605
The Katherine	1,771
Yam Creek	1,848
Southport	1,934
Palmerston	1,975

The extension to Western Australia in 1876, completed the chain of intercolonial telegraphs. The length of the South Australian section, from Adelaide to Eucla, is 979 miles, or 759 miles of entirely new line from Port Augusta, iron poles being used throughout.

A submarine cable was laid from Normanville to Kingscote, Kangaroo Island, 38·34 knots, in January, 1876, connecting with a land line 62 miles, to the lighthouse at Cape Borda, and later on to Cape Willoughby. Cables have also been laid to connect the lighthouses at Troubridge Shoal and Althorpe Island; and two cables from the end of the Largs Bay jetty to a buoy in the roadstead, by means of which the Orient and Messageries Maritimes steamers are placed in direct telephonic communication with their agents' offices at Port Adelaide and Adelaide, a flexible insulated wire, joined to the heavier cable, being brought on board the vessels, and then connected with a telephone.

The telephone system, which is entirely in the hands of the Telegraph Department, under a special Act (No. 207, 1881), was introduced in 1882; and telephone exchanges have been opened

at Adelaide and the Port, besides several public telephone offices, and a number of leased lines to private firms, and other persons. There are now over 400 subscribers, and the length of telephone wires in operation at the end of 1886 was 1,539½ miles. The total length of telegraph and telephone lines was 5,459½ miles, or 10,310½ miles of wire, and the number of telegraph offices 200.

The business of the Department in 1886 was as follows:—

Number of messages (colonial and intercolonial)	622,755
“ “ (international)	46,667

Total	<u>669,422</u>
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	£	s.	d.
Receipts from colonial and intercolonial messages	38,367	2	9
“ “ international messages	29,764	4	7

Total receipts	<u>£68,131</u>	<u>7</u>	<u>4</u>
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Gross charges on international messages	£256,526	19	6
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ZOOLOGICAL AND ACCLIMATISATION GARDENS.

The Zoological Gardens of Adelaide have been established close on four years, and are now second to none in the Australias. The number of animals, birds, &c., on exhibition number nearly 900. The society derives its revenue from three sources, viz., an annual grant from the Parliament, payment received at the gates of the Gardens from visitors, and subscriptions from members. The total quantity of land comprising the Zoological Gardens is about seventeen acres. The site is admirably chosen, being within five minutes walk of North-terrace, and close to the surrounding and thickly-populated neighborhoods of North Adelaide, Kensington, and Payneham. The Gardens are under the entire control of a council appointed annually by the subscribers. The present president is Sir Thomas Elder, G.C.M.G., who has held the position for three years. The Chief Justice, the Hon. Samuel J. Way, was the first president. Mr. R. E. Minchin, J.P., has been director of the Gardens from the commencement. He has twice visited foreign countries with the object of procuring rare animals, &c., and on each occasion has returned with a large and valuable collection.

THE OBSERVATORY.

The Observatory stands on the west park lands, and is in charge of Mr. C. Todd, M.A., C.M.G., the Government Astronomer, who has three assistants, viz.:—Mr. W. E. Cooke, B.A., Assistant Astronomer; Mr. R. F. Griffiths, Meteorological Assistant; Mr. E. P. Sells, Junior Assistant.

The Observatory, which has recently been largely added to, possesses a fine transit circle, made by Mr. Simms, of London, and an 8in. equatorial by Cook & Son, of York, besides some smaller instruments. It is also fully equipped with complete sets of all kinds of meteorological instruments, including barographs, thermographs, anemographs, pluviometer, &c.

The transit circle has an object glass of 6in. clear aperture, with a focal length of 85in.; it has two divided circles 30in. in diameter, graduated to every 5' in arc, each circle being read off to fractions of a second by means of four microscopes and pointer telescope fixed on parallel carrying circles. The telescope is supported on two iron piers resting on a compound system of bedplates, which afford means of adjustment in level and azimuth; and the whole rests on a solid granite and brick foundation. On the same foundation are two collimating telescopes, one north and the other south of the principal instrument, the axes of the three telescopes being in the same meridional plane. The observing room is 32ft. by 22ft.

In conjunction with the Government Astronomers of Victoria and New South Wales, and Captain Darwin, R.E., a determination has recently been made of the difference of longitude between Singapore, Banjoewangie, Port Darwin, Adelaide, Melbourne, and Sydney, by exchanging telegraph time signals. The difference of longitude between the Royal Observatory, Greenwich, and Singapore, had previously been determined in sections in the same way, so that the signals exchanged with Singapore gave the longitudes of the several Australian observatories. The longitude of the Adelaide Observatory was found to be 9h. 14m. 20.30s. E.; the latitude is $34^{\circ} 55' 33''$ S.

The time throughout the colony, or within the limits of the telegraph system, is regulated by the Observatory, Adelaide time

being everywhere kept, although the difference of longitude between the west and east boundaries is from 129° to 141° east longitudes, or 48 minutes in time. A time-ball at the Semaphore is dropped at 1h. p.m. daily, except Sundays, by a voltaic current from the Observatory.

The Observatory can be seen by visitors between the hours of 2 and 4 p.m., except on Saturday and Sunday; but in the evening only by special permission of the Government Astronomer.

South Australia, including the Northern Territory, lies between the parallels of 11° and 38° S.; it is therefore partly within and partly without the tropics, and enjoys a great variety of climate. On the north coast the year has two seasons—the dry, with S.E. winds, from May to September—the wet, with a prevalence of N.W. winds, frequent thunder storms and heavy rains, from October to April. The N.W. monsoon rains penetrate into the interior, but the amount rapidly diminishes as the coast is left. Thus, taking the published observations in 1882, the mean annual rainfall on the coast and inland at the stations on the overland telegraph is as follows:—

Station.	Inches.	Approximate Latitude.
Palmerston (Port Darwin)	62·523	$12\frac{1}{2}^{\circ}$ S.
Yam Creek	48·768	$13\frac{1}{2}^{\circ}$ “
Katherine River	42·284	14° “
Daly Waters	31·192	$16\frac{1}{2}^{\circ}$ “
Powell's Creek	19·729	18° “
Tennant's Creek	17·615	$19\frac{1}{2}^{\circ}$ “
Barrow's Creek	15·354	$21\frac{1}{2}^{\circ}$ “
Alice Springs	12·830	$23\frac{1}{2}^{\circ}$ “
Charlotte Waters	6·493	26° “
Peake	5·548	28° “

Occasionally the monsoon, or tropical rains, extend well across the continent, but in other years they may barely reach as far as the MacDonnell Ranges, and all south of that, down to Lake Torrens, is subject to prolonged drought.

The winter rains on the south coast accompany barometric depressions, or cyclonic disturbances, having almost uniformly a progressive motion from west to east. These are heralded by northerly or north-easterly winds and falling barometer on the advancing or eastern quadrant of the disturbance; and as the first

indications of their approach are felt on the west coast, and they take, as a rule, from thirty-six to forty-eight hours to pass from the meridian of Cape Leuwin to Kangaroo Island, the telegraphic weather reports exchanged at 9h. a.m. give timely warning of their existence and character. Most of these disturbances pass with their centre to the south of Adelaide, and the wind consequently veers from N.E. to N., N.W., W., and S.W.; but occasionally the centre is more northerly, and in such cases the rains will extend well inland up to latitude 28° , or still farther north, and perhaps be heavier over the northern agricultural districts, especially on and near the Flinders Range, than in the southern portions of the colony; but when the centre passes to the south of Kangaroo Island the rain, as a rule, is heaviest over the Mount Lofty Ranges, and along the coast.

Meteorological observations have been made in Adelaide for thirty years by the Government Astronomer, who has organised, in conjunction with the astronomers in the other colonies, an extensive and very complete system of daily weather reports, embracing the whole of Australia, Tasmania, and New Zealand. These reports, and an isobar map, showing also the direction and force of the wind, are exhibited at the General Post Office, and at Port Adelaide.

There are well furnished meteorological stations at Port Darwin, Daly Waters, Alice Springs, Farina (barometer only), Port Augusta, Clare, the Agricultural College, Roseworthy; Mount Barker, Strathalbyn, Eucla, Streaky Bay (barometer only), Cape Borda, Robe, Cape Northumberland, and Mount Gambier. Besides these more than 300 stations are supplied with rain gauges, the returns from which are published monthly.

The temperature in Adelaide exceeds 90° , taking the average of thirty years, in January, twelve days; February, ten days; March, seven days; April, one day; October, one day; November, five days; December, nine days; or, during the year, on forty-five days.

The following table gives the Mean Readings of the Barometer, the Temperature, Rain, and Evaporation, at the Adelaide Observatory in 1886.

Month.	Mean Barometer (corrected and reduced to 32° F.) and Sea Level at 9 a.m.	Temperature.			Mean Humidity.	Rain.	Evaporation.
		Absolute Maximum.	Absolute Minimum.	Mean of Month.			
January	29.974	112.4	50.8	76.0	43	Inches. 0.766	Inches. 9.206
February	29.988	105.7	49.1	69.1	46	0.380	6.112
March	30.138	99.3	48.0	68.8	46	0.012	6.015
April	30.143	94.4	44.6	63.2	56	1.419	3.496
May	30.186	73.5	37.7	57.2	63	1.090	2.063
June	30.361	68.3	35.6	52.8	68	0.423	1.405
July	30.180	69.0	36.6	52.8	69	2.724	1.313
August	29.886	73.1	38.6	54.4	69	3.089	2.043
September	30.058	82.5	40.1	61.0	56	0.686	3.727
October	29.972	79.3	39.5	58.4	60	2.169	4.459
November	30.036	99.1	46.5	67.8	48	1.067	7.050
December	29.979	102.3	46.9	71.4	44	0.615	9.037
Year	30.075	112.4	36.6	62.7	56	14.420	55.926

Table showing the Mean Monthly and Yearly Rainfall at the undermentioned Stations in South Australia to the end of 1886, together with the Greatest and Least Yearly Rainfalls recorded.

Month.	Port Darwin.	Alice Springs.	Blinman.	Melrose.	Burra.	Adelaide.	Kadina.	Blanchetown.	Eucla.	Penola.	Mount Gambier.
January.....	15-136	2-369	1-450	1-646	-894	-792	-369	-780	-877	1-181	1-613
February	12-967	1-942	-954	1-042	-822	-883	-370	-594	-271	-868	1-063
March	11-632	1-146	1-079	1-195	1-129	1-147	1-351	1-139	1-165	1-287	1-290
April	3-576	-741	-931	1-649	1-102	1-592	1-816	1-037	1-590	1-938	2-346
May	1-379	-592	1-973	3-007	2-040	3-067	2-236	1-643	1-234	3-335	3-716
June	-065	-442	1-643	3-153	2-254	2-815	1-794	1-043	-809	3-768	3-858
July	-006	-428	-994	2-786	2-166	2-841	1-770	-940	-980	3-294	4-014
August	-190	-762	1-169	2-492	1-948	2-302	1-334	1-024	-830	3-697	4-286
September....	-363	-641	1-226	2-576	1-948	1-796	1-417	1-081	-658	2-892	3-176
October	2-352	-817	-797	2-206	1-843	1-764	1-185	-963	-619	2-415	2-493
November....	4-458	1-004	-995	1-417	-870	-961	-841	-847	-654	1-645	1-810
December	11-140	-922	-670	-819	-817	-820	-406	-641	-404	1-461	1-786
Year	63-266	11-796	13-870	23-988	17-323	20-080	14-677	11-632	10-092	27-750	31-450
Greatest amount In	80-070 1871	27-210 1879	23-460 1872	38-780 1872	26-037 1870	29-209 1875	19-280 1880	19-710 1870	13-775 1877	40-947 1863	65-675 1861
Least amount... In	45-000 1881	5-390 1884	7-610 1868	15-565 1881	10-316 1865	13-434 1876	10-080 1876	6-970 1876	6-373 1878	18-800 1877	21-520 1877

The following table shows the Maximum and Minimum Temperature, the Mean Temperature, and the Mean relative Humidity (complete saturation = 100) of each Month of the Year at Port Darwin, on the north coast, and Alice Springs, in the MacDonnell Ranges, or in the centre of the continent.

Month.	Port Darwin.				Alice Springs.			
	Maximum Temperature.	Minimum Temperature.	Mean Temperature.	Mean Humidity.	Maximum Temperature.	Minimum Temperature.	Mean Temperature.	Mean Humidity.
January	98·0	71·0	86·0	75	116·0	54·0	85·7	32
February	57·0	71·0	82·9	79	112·0	58·0	81·6	46
March	102·0	68·0	86·4	69	98·0	45·0	75·6	36
April	104·0	70·0	85·7	65	98·0	40·0	68·9	39
May	100·0	63·0	80·8	63	86·0	33·0	59·6	43
June	98·0	66·0	81·2	63	87·0	32·0	60·2	44
July.....	95·0	63·0	78·6	60	86·0	28·0	54·6	42
August	95·0	65·0	81·3	66	96·0	29·0	59·8	41
September	101·0	63·0	82·7	62	97·0	32·0	62·6	36
October	102·0	72·0	85·5	68	104·0	44·0	72·2	43
November	102·0	70·0	86·5	67	106·0	49·0	77·2	37
December	102·0	70·0	84·4	74	116·0	54·0	84·2	30
Year	104·0	63·0	83·5	68	116·0	26·0	70·0	39

RELIGIOUS DENOMINATIONS.

The Church of England in the Diocese of Adelaide,

General Description.—The See of Adelaide was founded in 1847, and by the letters patent of the first Bishop (the Right Rev. Aug. Short, D.D.) the boundaries of the Diocese were coterminous with the boundaries of the colony of South Australia. When the Northern Territory was added to the colony, it appears to have been regarded as included in the Diocese; but as this is by no means certain, the Primate has requested the Bishop to exercise episcopal supervision over this portion of the colony until proper steps can be taken for its inclusion in this Diocese. The whole colony may be regarded as comprising three divisions—South Australia proper, Central Australia, and the Northern Territory. It thus stretches across the whole continent from the Southern Ocean to the Indian Ocean. The total area comprises 914,730 square miles. The population is about 300,000, of which number about 3,000 are residents in the Northern Territory.

The Right Rev. George Wyndham Kennion, D.D., of Oriel College, Oxford, was consecrated Bishop of Adelaide in Westminster Abbey on November 30th, 1882. The church members are returned at 80,000. The number of clergy working in the Diocese is seventy. During the year ending December, 31st, 1886, there were 2,603 persons baptized, and the number of children receiving religious instruction in Sunday schools was 9,656. There are in the Diocese 128 churches and fifty-six mission stations.

The Diocesan Synod consists of the Bishop as President, all the clergy licensed in the Diocese, and ninety-two lay members elected by the various parishes. The finances of the Synod are managed by a standing committee, consisting of the Bishop, the Dean, and the Archdeacon of Adelaide, the Archdeacon of Flinders, and the Archdeacon of Mount Gambier and the West, with seven clergymen and twenty-two laymen, elected annually.

The Collegiate School of St. Peter, Adelaide.

The Collegiate School of St. Peter, Adelaide, was incorporated by Act of Parliament in 1849. The buildings, upon which nearly £30,000 have been spent, consist of a chapel, schoolrooms,

laboratory, gymnasium, boarding-house for masters and about fifty boys, headmaster's residence, and they stand in about thirty acres of play ground.

The Board of Governors consists of the Bishop, the Dean, and the Archdeacon of Adelaide, *ex officio* members, and the Venerable Archdeacon Farr and eleven lay members of the Church of England.

The Headmaster is the Reverend Francis Williams, M.A., of Lincoln College, Oxford; the second master is J. H. Lindon, Esq., B.A., of Trinity College, Cambridge; the third master and bursar is the Reverend J. C. Haynes; and there are six assistant masters.

There are four scholarships, founded by the late Dean Farrell; they are of the value of £50 a year each, and are tenable for three years. Two of them are limited to sons of clergymen of the Church of England, and two of them are open. The Vansittart scholarship, which is worth £50 per annum, is for the purpose of educating a boy from the Mount Gambier district. The Westminster, Christchurch, Allen, and Short scholarships are each of the value of £10 per annum, and are tenable for two years. The following scholarships are awarded annually:—The Prankerd, for modern languages; the Bowman, for physical science; the Wyatt, for botany or zoology; the May, for physical science; the Young, for mathematics; and the McCulloch, for mathematics. The Adelaide St. Peter's Collegians' Scholarship is of the value of £50 per annum, and is tenable for three years at the Adelaide University.

The number of boys in attendance is 181.

Wesleyan Methodist Church.

Rev. J. Young Simpson, President of the Conference—residence, Glenelg—attends president's vestry, Pirie-street Church, Monday, Wednesday, and Friday mornings, 10·30 till 12.

Rev. James Haslam, Secretary of the Conference; residence, Essex-street, Goodwood.

Wesleyan Methodism was founded in this colony in 1837. The first sermon preached in South Australia was by a Wesleyan local preacher, on the sandhills at Glenelg, in 1837. The first Church erected by the denomination stood in Hindley-street; it was opened in 1838. The first minister was the Rev. William Longbottom, who was wrecked near Encounter Bay, when proceeding to Western Australia; and, at the request of the handful of Methodists then in Adelaide, he took charge of the Church.

STATISTICS.

	1838.	1887.
Ministers	1	71
Churches	1	208
Hearers	150	46,137
Sunday school scholars ..	100	18,838

The Wesleyan Church has a Loan fund amounting to £6,00 0 which greatly assists burdened Church trusts.

The Home Mission work of the Church is very extensive, reaching from Palmerston in the Northern Territory to Millicent in the South-East. The amount raised annually is £1,000.

Prince Alfred College.

Prince Alfred College, one of the finest educational institutions in the colony, belongs to this denomination. The hon. president is the Rev. J. Young Simpson, President of the Conference. The Head Master, Fredk. Chapple, Esq., B.A., B.Sc., is ably assisted by a large and efficient staff of teachers, many of them holding University degrees; and the splendid results of their teaching, shown in the position taken at the University matriculation and other examinations by Prince Alfred boys, proves the thoroughness of the system of education carried out in that admirable institution. The college is under the management of a large committee of representative gentlemen. The spirit of the school is decidedly christian, and strictly undenominational. Some 350 pupils are in attendance at the present time.

The Wesleyan Church has just been celebrating its jubilee year, and the amount promised by its adherents approximates to £20,000.

Presbyterian Church of South Australia.

Churches, 22; ministers, 14; elders, 70; managers, 173; members, 1,736; sitting accommodation provided for 5,266; average attendance, 2,382; Sabbath schools, 28; teachers, male, 104, female 153, total, 257; scholars, male 1,011, female 1,193, total, 2,204; Bible classes, 19; members of same, male 119, female 180, total, 299; preaching stations, 12; accommodation provided, 725; average attendance, 360; prayer meetings, 21; average attendance, 482.

It will be seen that altogether there are 34 places for Presbyterian worship, Churches 22, and stations 12; and that accommodation is provided for 5,266 and 725, total, 5,991 persons, and is availed of by an average of 2,382 and 360, total, 2,742.

The officers of the General Assembly are—Moderator, Rev. James Lyall, of Adelaide; Clerk of Assembly, Rev. John Hall Angus, of Port Adelaide; Treasurer, Hon. D. Murray, M.L.C.

There are three Presbyteries, as follows:—Presbytery of Adelaide, clerk, Rev. W. F. Main, of Norwood; Presbytery of the Onkaparinga, clerk, Rev. W. S. Macqueen, of Strathalbyn; Presbytery of Belalie, clerk, Rev. T. D. Smythe, of Kybunga.

The Church has one missionary to the heathen, the Rev. Wm. Gray, stationed at Weasisi, Tanna, one of the New Hebrides islands.

Names of ministers and their location:—Angus, J. H., Port Adelaide; Burns, J. A., Mount Barker; Gordon, J., Gawler; Gray, T., Mount Pleasant; Lyall, J., Adelaide; Law, A., Monarto; Macqueen, W. S., Strathalbyn; Milne, W. R., Mannum; Main, W. F., Norwood; Macaulay, J., M.A., Woodside and Nairne; Mitchell, R., Port Augusta; Paton, D., D.D., Adelaide; Rorke, E., B.A., Adelaide; Smythe, T. D., Blyth.

On the 10th day of May, 1865, the Presbyterian Church of South Australia came into existence by the union of the representatives of the three Presbyterian bodies, the Established, the Free, and the United Presbyterian churches; and since then, up till the 3rd March, 1886, the supreme court of the Church in the colony was the Presbytery of South Australia; upon that date a division of the Presbytery into two parts took place, the new Presbyteries being styled the Presbyteries of Adelaide and Belalie respectively. Since then, a further division has been brought about, a new Presbytery being formed in the districts south of the city, called the Presbytery of the Onkaparinga.

The first Moderator of the General Assembly of the Presbyterian Church was the Rev. James Gordon, of Gawler.

South Australian Baptist Association.

The opening services of the first Baptist Church in South Australia were held on September 2nd, 1838; the membership when the church was opened was only fifteen.

In 1862, a number of general Baptist Churches formed an association, chiefly for the purpose of prosecuting Home Missionary work; from time to time other churches have joined, and the association now includes all the general Baptist Churches in the colony.

The present statistics are as follows:—

Churches	52
Membership	3,838
Pastors	30
Sunday Scholars	5,269
Sunday School Teachers	516
Chapels	53
Other buildings used for Divine worship	13
Seating Accommodation	13,895
Value of Church Property	£80,256
Debts on Church Property	£19,606
Receipts for past year	£12,282

Out of the Baptist Association has grown a Missionary Society, which supports ten missionaries in Furredpore, Eastern Bengal; a Building Fund with a capital of £2,022; a Jubilee Debt Extension Fund, to which already £1,576 has been contributed; an Aged Ministers' Relief Fund, capital £2,889. The official organ of the association, *Truth and Progress*, has now been in existence nineteen years; it is published monthly, the present editor being the Rev. H. J. Lambert, Norwood.

The New Church (Swedenborgian) in S. A.

The Adelaide Society of the New Church has been in existence forty years, and numbers under a hundred, of which fifty-five are registered members, who worship in a building situated on the west side of Hanson-street, Adelaide; the Rev. E. G. Day is the preacher.

The Church building contains a Sunday School, a Band of Hope, and a Total Abstinence Union attached to the Society.

Unitarian Church.

Unitarian public worship was begun in South Australia in October, 1855, in the building in King William-street, Adelaide, then known as Green's Exchange, the minister being Rev. John Crawford Woods, B.A., before that time minister in various places in the old country, and for the longest period at St. Mark's Chapel, Edinburgh. On the 23rd December, 1856, the foundation stone of the Unitarian Christian Church in Wakefield-street, Adelaide, was laid by the late Hon. John Baker, M.L.C., of Morialta; and more recently a lecture hall and schoolrooms have been erected close by the Church. About twenty-two years ago a place of worship, cemetery, and several acres of land at Shady Grove, near Mount Barker, were presented to the Unitarians by Mr. John Monks, of

Shady Grove, and these Unitarian religious services are regularly conducted chiefly by lay readers. There are in connection with the Unitarian Church in Adelaide, a Sunday School, a Mutual Improvement Society, a Theological and a Children's Libraries, and a Minister's class for religious instruction. The Unitarians in the province number about 700, and there is Church accommodation for 500.

Free Presbyterian Church.

This denomination has existed in the colony since 1854. It holds to the Disruption principles of the Free Church of Scotland, as these were expressed in 1843; rejecting Erastianism on the one hand, and Voluntarism on the other, and retaining the simple Scriptural forms of worship uniform in Scotland at that period. In 1881, the Presbytery which governed it became defunct, through the translation of two of its ministers to the sister Church in Victoria, and the death of a third, since which time the denomination has been without a supreme governing court. It is now served by two ordained ministers, and catechists, elders, and deacons, and has churches at Morphett Vale, Aldinga, Yankalilla, Kingston, Lucindale, and Spalding, as under:—

John Knox Church, Morphett Vale, by Rev. J. Benny.

Church at Aldinga, at present closed.

Church at Yankalilla, by Rev. John Anderson.

McCheyne Church, Kingston, by Catechist.

Church at Lucindale, by occasional service.

Church at Spalding, by Catechist in Gaelic, and occasionally by Minister of Morphett Vale in English.

Society of Friends.

The Society of Friends have two places of worship in South Australia, one at Pennington-terrace, North Adelaide, and the other at Mount Barker; these have been regularly open for public worship for more than forty years.

The presence of a minister of the Gospel is not essential to the right holding of these meetings, as the Friends hold the belief that it is their privilege to meet for worship under the authority and friendship of Christ, without a pre-arranged service.

There are, however, several who are frequently engaged in the sacred office of the ministry.

They recognise in their Church the offices of ministers, elders, and overseers.

Meetings for conducting Church affairs are held every two months at North Adelaide and Mount Barker alternately.

Number of members, about seventy. Registering Officer, Benjamin Sanders, Netley, Mount Barker.

Bible Christian Church.

The Bible Christian Connexion in South Australia consists of the following circuits:—Adelaide, Bowden, Goodwood, Eastwood and Kensington, Port Adelaide, Gawler, Grace, Yankalilla, Clarendon and Willunga, Port Elliot, Mount Lofty, Mount Torrens, Millicent, Burra, Kapunda, Auburn, Riverton, Hallett, Silverton (N.S.W.), Kadina, Moonta, Balaklava, Kulpara, Crystal Brook, Keilli, Snowtown, Port Augusta, Gladstone, Wilmington, Wirrabra, Quorn, Ororoo, Port Germein, Carrieton. There are 130 Churches, 21 other places in which services are held, affording accommodation for 18,500 worshippers. There are 23 parsonages, 11 cottages, and 18 schoolrooms, the aggregate value being returned at £65,396. There are 2,856 communicants, 960 teachers, and 6,329 scholars.

The affairs of the Church are managed by an Annual Conference, which meets in Adelaide in February. The President for this year is Rev. John Thorne, Adelaide; Secretary, Rev. W. W. Finch, Gladstone.

To commemorate the life and labors of the late Rev. James Way, the pioneer minister of the body, who, with the Rev. James Rowe, arrived in the colony in December, 1850, Way College has been founded. A handsome and commodious building in North Goodwood, facing the Adelaide south park lands, has been purchased for the purpose. The necessary funds are being subscribed, the Chief Justice, Sir Thomas Elder, G.C.M.G., Mr. J. G. Ashton, Mr. Jos. Ashton, Mr. W. G. Torr, Sir Henry Ayers, K.C.M.G., Hon. T. Playford, M.P. (Premier), J. H. Howe, Esq., M.P., Mr. John Darling, and other well known citizens contributing handsomely to the fund. Each donor of ten guineas, before the college opens in 1889, is styled a founder, and will have a vote in the election of deserving boys to founders' scholarships when vacancies occur.

The principal places of worship of the denomination in Adelaide and the suburbs are at Young-street, City, Goodwood, Bowden, Glanville, Kensington, Eastwood, &c.

Christian Churches.

About forty years ago, Mr. Thomas Playford (father of the present Premier of South Australia), gathered together a few christians who were willing to unite for worship upon an undenominational basis. They held their meetings for some time in a small chapel in Hindley-street, and, in 1848, removed to a larger building in Bentham-street. Other Churches were subsequently formed, and now meet for worship in Zion chapel, Pulteney-street; George-street chapel, Stepney; Hindmarsh place, Hindmarsh; Burnside, Kersbrook, and Stansbury. There are Sunday schools, and other auxiliaries to christian work, connected with these Churches.

The above Churches practise the immersion of believers, weekly communion, and give prominence to the doctrine of the personal pre-millennial advent of the Lord Jesus Christ.

The work and business of these Churches is carried on and conducted by pastors and deacons, elected by the members of each church.

United Free Church of South Australia (Incorporated).

In connection with this body there are three chapels, affording accommodation for 800 persons.—Adelaide, Wymouth-street, Burnside, Thebarton. Rev. B. P. Mudge, Minister, West Adelaide.

These churches were formerly connected with the Victorian district of the U.M.F. Churches, but a separation having taken place in 1884, the churches in South Australia assumed the name contained in their deed of incorporation as above.

German Evangelical Lutheran Church.

The German members of the community possess about 80 places of worship, accommodating 9,000 to 10,000 persons. Of these, 50 are chapels with sittings, 30 school or other rooms used for worship, capable of holding 1,000 attendants. There are 40 schools, 45 teachers, and about 1,350 scholars, in connection with the undermentioned chapels (denominational day schools):—Adelaide, Rev. E. Homann; Appila, Rev. L. Kaibel and W. Fuhlborn; Bethanien, Rev. G. A. Heidenreich; Blumberg, Rev. H. Harms; Callington, Rev. K. Dorsch; Caltowie, Rev. J. Thiessen; Condowie, Rev. A. Döhler; Karlsruhe, Rev. G. Bertram;

Dutton, Revs. E. D. Appelt and J. Bode; Emmaus, Rev. D. Georg; Emu Downs, Rev. J. Hansen; Gawler Town, Rev. Jul. Rödiger; Hahndorf, Revs. C. F. A. Stempel and F. Braun; Hoyleton, Rev. H. Meyer; Klemzig, near Adelaide, Rev. C. Maschmedt; Langmiel, near Tanunda, Rev. J. C. Auricht; Light's Pass, Revs. J. P. Niquet and G. J. Rechner; Lobethal, Rev. Rud. Ey; Mannum, Rev. L. Kuss; Mount Gambier, Rev. F. W. Matschoss; Nain, Rev. C. F. W. Heinze; Point Pass, Revs. F. Rechner and Drautz; Rosenthal, Revs. G. Dost and Ph. J. Oster; Tanunda, Rev. J. Reusch; Yorketown, Revs. T. Koschade and J. H. Hoopman.

Methodist New Connexion Church, Franklin-street, Adelaide.

The above Church opened a mission in South Australia in the year 1861. The first minister appointed was the Rev. J. Maughan. During his ministry the Church in Franklin-street was erected. It will seat 500 people. It is acknowledged to be a convenient and beautiful structure. The original cost was about £5,000. The present debt upon the estate is £1,800. A branch Church and Sunday school was opened in Goodwood in 1886, and is being worked with cheering success. The present minister is the Rev. E. Gratton.

The Welsh Free Church, Adelaide.

This Church was established in the year 1879, and meets for worship in the lower schoolroom of the Flinders-street Presbyterian Church.

It is an union Church, composed of members from all the different denominations. As there were not enough of any one denomination to start a Church, they all agreed to differ, and meet together to worship God in their own tongue.

The Rev. Richard Jones, formerly of Monmouthshire, held the pastorate of the Church till very recently.

Church of Christ.

In connection with this body there are Churches at the following places:—Grote-street, Adelaide; Kermode-street, North Adelaide; Robert-street, Hindmarsh Chapel-street, Norwood; Park-street, Unley; also, at Alma, Balaklava, Baroota, Cameron, Dalkey, Fulham, Hall, Langhorne's Bridge, Lochiel, Long Plains, Mallala,

The Catholic Church.

The Catholics of South Australia petitioned the late Archbishop Polding (then Vicar Apostolic) in 1839, to send them a clergyman; and, in January, 1840, the Vicar General Ullathorne arrived in Adelaide, and celebrated mass for the first time in the house of Messrs. Johnson & Phillips, near East-terrace. His stay was necessarily short; yet he made arrangements for the coming of the first priest, the Rev. William Benson, towards the end of the following year. He had a wooden building in Waymouth-street as a church and residence.

In 1842, Adelaide was made an Episcopal See, and was offered to Dr. Ullathorne; he declined, however, as he determined on residing in England. In 1844, Dr. Francis Murphy, of Sydney, accepted the charge, and was consecrated on September 8th, and took possession on November 6th. He died April 27th, 1857. His successors were Bishops Geoghagan and Shiel.

Adelaide was erected into an Archiepiscopal See by Pope Leo XIII. on May 20th, 1887, and Dr. Reynolds nominated its first Archbishop. The new Province embraces Southern and Western Australia, having Perth, Port Augusta, and Port Victoria, as Suffragan Sees.

The Catholic population of the colony is estimated at 42,000, and is at present attended by an Archbishop, a Vicar General, three Rural Deans, and forty-seven Priests.

The educational requirements are attended to by the Jesuit Fathers at Seven Hills College; the Christian Brothers' College, Wakefield-street; a boarding and day-school at New Cabra, Goodwood, is conducted by Sisters of the Order of St. Dominic, who have also select day-schools in Franklin-street. The community in the above convents number eighteen. There are two communities of Sisters of Mercy, one in Adelaide, with two largely attended schools, and the other at Mount Gambier, with boarding, day, and poor schools. These Sisters attend hospitals, prisons, and the sick poor in their homes. There are twenty-four Sisters in these communities. The Dominican Nuns of the Congregation of St. Catherine of Sienna number seven in community. They conduct a boarding and day-school at North Adelaide.

The Sisters of St. Joseph have a care of the Orphanage, the Refuge for penitent women, and a House of Providence for poor women and as a home for young girls seeking situations. They also attend to several schools throughout the colony, which are

largely attended. The sisterhood numbers ninety-six. Beside the schools under the care of the several sisterhoods, there are many others conducted by lay teachers.

The churches number 64; mission churches (*i.e.*, serving for schools on week-days, and churches on Sundays), 29; stations, visited by the clergy periodically, 103. The new diocese of Port Augusta embraces all country north of the County of Victoria.

The Congregational Churches of South Australia.

The first minister of this body was the Rev. Thos. Q. Stow, who landed on October 18th, 1837, within a year of the foundation of the colony, since which time there have been ninety-eight ministers holding office as Congregational pastors. There are at this time (1887) thirty ministers, of whom twenty-three are holding charges, and the others doing work, either in occasional public ministry, or other church work.

From the constitution of these churches, accurate statistics are difficult to obtain; but the following may be looked upon as approximately correct:—Church members, 2,430; adherents, 10,000; Sunday scholars, 5,000; buildings for public worship, 42; sittings in them, 10,126; preaching stations in rooms, 24; sittings in them, 3,835; total sittings, 13,961.

The following Societies are connected with the Congregational Churches of South Australia:—

1. The Congregational Union. Income, £355 15s.
2. The Parkin Trust, for education of ministers, and other purposes. Capital, £15,222; income, £569 8s. Not available until the income reaches £1,000.
3. The Parkin Congregational Mission, for gifts to widows, and Bush Missions. Income, between £1,200 and £1,400 a year. Not available until 1890.
4. The Chapel Building Society, for assisting in the erection of places of worship. Capital, about £2,500.
5. Ministers' Provident Fund. Capital, £3,630.
6. Lay Preachers' Association. Members, 25; stations round Adelaide, 8; with about 40 or 50 more members in the country districts.

Milang, Millicent, Mount Gambier, Point Sturt, Port Pirie, Stirling East, Strathalbyn, Wild Horse Plains, Yatina, and York. The number of members in connection with these Churches is 1,800, and scholars in Sunday schools about 1,300, constant additions to which numbers are being recorded.

Brethren T. H. Bates, J. Colbourne, T. J. Gore, M. Wood Green, and W. Judd, are engaged as evangelists. Mr. Green being now on a visit to America and England, in the interests of a Bible College which it is proposed to establish. In addition to the evangelists, a large number of brethren take part in the conduct of the public services and in carrying on the general work of the Churches. Representatives of the various Churches meet in Annual Conference in September, to report progress and devise means for further usefulness, in preaching the gospel, and establishing Churches throughout the colony as centres for christian work and effort. Further particulars concerning this body may be obtained by addressing communications to the Secretary of the Church of Christ, Grote-street, care of Mr. David Gall, Tynte-street, North Adelaide.

CHARITABLE INSTITUTIONS.

For the relief of infirmity and distress, the following Government institutions have been established in and near Adelaide:—

THE ADELAIDE HOSPITAL is situated on a well-drained spot east of the Exhibition building; and connected with it is a dispensary for out-door patients, facing the exhibition road. The hospital has accommodation for 231 patients, but the number of beds occupied seldom exceeds 170. It is controlled by a committee of management, consisting of members of the medical profession and laymen. The institution is supported principally out of the public revenue; voluntary subscriptions contribute nearly one-seventh of the annual cost. The resident secretary is Mr. E. H. Hallack, whose residence is adjoining the dispensary. Visiting days are Tuesdays, Thursdays, and Sundays, from 2 to 4 p.m.

A Government hospital is also established at Port Adelaide, and country hospitals are to be found at Mount Gambier, Wallaroo, Port Augusta, Port Lincoln, Clare, and at Teetulpa goldfields.

LUNATIC ASYLUMS.—The Adelaide Asylum for the Insane on North-terrace, to the east of the Botanic Gardens, and the Parkside Asylum at Parkside east, are supported by the State. Fees for maintenance are levied where the relatives can afford to contribute, but such recoveries bear but a very small proportion to the annual outlay. The cost of both asylums for the year ended June 30th, 1886, was £25,033 6s. 11d., whilst the fees for maintenance, &c., amounted to £2,257 3s. 1d. Dr. Alex. S. Paterson, Colonial Surgeon, is the resident medical officer at Adelaide, and Dr. W. L. Cleland at Parkside. Steward and secretary to both asylums, Mr. John J. Hannah. Visiting days for the public at both asylums, 10 to 12, and 2 to 4 daily, excepting Sundays. Visiting justices, appointed by the Government, make frequent visits to examine into the general condition of the institution.

THE DESTITUTE ASYLUM on North-terrace, at the rear of the South Australian Institute and Public Library, is also supported out of the public revenue. Besides offices, and residences for officers, a lying-in department is included in the same enclosure. Relief is dispensed by a board, which meets every Thursday, at 10 a.m. The superintendent and secretary, Mr. Arthur Lindsay, resides on the premises.

The industrial and reformatory schools formerly under the control of the Destitute Board, have been recently separated, and placed under the jurisdiction of a State Children's Council; president, Dr. Stirling. The offices of the State Children's department are in Freeman-street.

The boarding-out system is very extensively adopted throughout the colony, but there are still the following Government institutions occupied by deserted and criminal children:—Industrial and Reformatory School for girls at Magill; and Reformatory School for boys, hulk *Fitzjames*, Largs Bay.

Amongst the principal private institutions, supported by private subscriptions, and deserving of general sympathy and aid, are the following:—Home for Incurables at Fullarton; Convalescent Hospital, St. Margaret, Military-road, Semaphore; the Cottage Homes for the aged and infirm poor and widows, situated in Stanley-street and Kingston-terrace, North Adelaide; Adelaide Children's Hospital and Training School for Nurses, Brougham-place, North Adelaide, visiting days, Tuesdays, Thursdays, and Sundays, 2 to 4 p.m.; the South Australian Institution for the Blind, Deaf, and Dumb, at Brighton; Industrial School for the Blind, Brougham-place, North Adelaide, open daily, 9 to 5; the Orphan Home, for the reception and training of orphan girls, Carrington street, Adelaide; the Servants' Home, corner of Flinders and Freeman-streets, Adelaide; Adelaide Retreat for Women, at Walkerville; Inebriates' Retreat, at Belair; the Bushmen's Club, Whitmore-square and Gilbert-street, Adelaide; Prince Alfred Seamen's Home, St. Vincent-street, Port Adelaide.

CENTRAL AND LOCAL BOARDS OF HEALTH.

The laws relating to sanitation are contained chiefly in the Public Health Acts of 1873, 1876, and 1884. These are administered by the Central Board of Health and by Local Boards.

The Central Board was established in 1873, and consists of the President and four other members appointed by the Government.

Local Boards.—All municipal councils are Local Boards of Health for their respective towns. Other local boards are formed from time to time by order of the Government. There are at present thirty-eight local boards.

Local boards have powers to make orders and regulations for the removal and prevention of nuisances within their respective districts. In cases of neglect the Central Board has authority to compel local boards to do what is necessary or proper for the purposes of the Health Acts. In places where there is no local board the Central Board has direct jurisdiction.

In emergencies the Central Board has power to make special regulations for the cleansing, purifying, and ventilating of streets, houses, churches, schools, and other places of assembly, the erection of public closets, the speedy interment of the dead, and generally for preventing the spread and mitigating the effect of infectious diseases; also for the provision of medical aid and medicine for persons infected. In cases of smallpox and other dangerous infectious diseases not usually met with in the colony, the Board has very extensive powers to enable it to stamp out promptly the disease on its earliest appearance.

The Central Board has also authority to order an inquiry, and to compel the attendance of witnesses whenever it requires information on any matter (whether of scientific opinion or fact) connected with the discharge of its duties.

The administration of the Adulteration of Food and Drugs Act is also intrusted to the Central and Local Boards of Health.

The Quarantine Act is administered by the Government under the advice of the Central Board. All Health officers are required to correspond with and to report to the board on all subjects relating to quarantine.

CENTRAL AND LOCAL BOARDS OF HEALTH. 125

Under the Vaccination Act every child born in the colony must be vaccinated within six months of birth. The president of the Central Board of Health is also Vaccination officer for South Australia. He is required to maintain a supply of efficient vaccine lymph, and to exercise a general supervision over the public vaccinators throughout the colony.

THE MARRIAGE LAWS.

Marriages may be celebrated by the Registrar-General, the Deputy Registrars or District Registrars, and by officiating Ministers of all religious denominations whose names are ordered by the Governor to be entered on a roll kept in the Registrar-General's office. An officiating Minister may use any form of marriage usual with his denomination, and his signature on the marriage certificate is evidence that the marriage has been celebrated in due form.

Before any marriage can be celebrated the parties must either have obtained a certificate from the Registrar-General or a District Registrar that fourteen days' notice has been given, and that no authorised person has forbidden the issue of the certificate, or they must obtain a licence from the Registrar, his deputy, or a District Registrar, or from an officiating Minister. After the issue of a certificate, or the granting of a licence, a marriage may be celebrated at any time within three months. Caveats against the granting of a licence or a certificate may be entered by any person who objects to the marriage; after which the marriage cannot be celebrated until after due inquiry.

Before marriage a minor must produce the written consent of his or her parent or guardian, unless satisfactory grounds for not having obtained such consent shall be assigned.

The person celebrating the marriage must make out, in triplicate, a certificate of the marriage; one copy is to be given to the parties thereto, another is to be sent within seven days to the Registrar of the district, and the third to the Registrar-General.

Each District Registrar and officiating Minister must also send to the Registrar-General a quarterly return of all marriages performed by him during the preceding three months, or a nil account if no marriages have been performed by him during this period.

The Registrar-General is required to arrange the certificates he receives, and have them bound, and kept safe for reference. Certified copies are to be evidence.

In case of fraudulent marriages (through false declarations or

otherwise), the guilty party may be made to forfeit all property accruing from the marriage.

The fee for a marriage at a registration office is ten shillings. The fee for a licence issued by a Registrar is three pounds. These fees are paid into the Treasury.

SOUTH AUSTRALIAN MILITARY FORCES.

These are at present* as shown in the table below :—

Nature of Forces.	Establishment. (See Remarks.)		Term of Service Enlisted for.	Remarks.
	Officers.	Warrant Officers, Non-Com. Officers, and Men.		
I. Staff S.A. Forces	8	4	—	<p>This is the normal peace establishment, as laid down by the Act, of the Active Militia, but its Reserve may be increased. At present, owing to large reductions in 1885, this force is under its establishment.</p> <p>By proclamation the establishment may, in case of necessity, be increased to 1,500 men.</p> <p>No establishment is laid down for this force, which, if required, in time of emergency would be raised by ballot.</p> <p>No establishment is laid down for this force. The strength shown is the approximate strength at present.</p>
II. Permanent Military Force (S.A. Artillery)	2	45	5 years	
III. { Active Militia.. Active Militia Reserve... }	70	850	3 years	
	5	100		
IV. Reserve Militia..	{ As may be pro- claimed.		As may be proclaimed	
V. Volunteer Force.	95	1,650	{ To give 3 months' notice of wish to resign	
Grand total	180	2,649		

* September 15th, 1887.

The origin and history of these forces is shortly as follows :—

I. Permanent Military Force.—S.A. Artillery.

In 1878 an Act was passed (amended in 1880) authorising the formation of a standing (or permanent) Military Force of 4 officers and 130 men.

This Act was not carried out until 1882, when a force of one officer and twenty men (Garrison Artillery) was raised under the Act.

This force was increased in 1885 to two officers and fifty men, under the command of Major Gordon (late Royal Artillery), and was slightly reduced to its present strength in 1886.

II. Active Militia and Active Militia Reserve.

The first organisation for a force of this nature dates from 1854, when a Militia Act was passed, empowering the Government to call a force of 2,000 men, to be ballotted for from the citizens between eighteen and forty-six years of age, if sufficient volunteers were not forthcoming.

No action was ever taken under this Act.

In 1865-6 an Act was passed authorising the calling out of a body of not less than 540 nor more than 1,000 paid volunteers, this force being styled the Volunteer Military Force, at 5s. per day ; also a Reserve Force of 1,000 men at the same rate.

This Act was amended in 1867, higher pay being given by it to Artillery, and a Troop of Cavalry (providing their own horses) being authorised.

No men were, however, raised under these Acts for many years.

But, in 1877, the strong warlike feelings awakened throughout the colony determined the Government of the day to take active steps towards raising definite organised local forces under the above-mentioned Acts.

Imperial officers with a small staff of drill instructors were obtained from England to organise a body of 1,000 paid volunteers, raised under the Acts of 1865-6-7. These officers were in the first place :—Colonel Downes, R.A. (now retired with the rank of Major-General), as Commandant, and Major Godwin, of the 103rd regiment, as his principal staff officer (D.A.A.G.).

Amending Acts were passed in 1881-2, allowing of a maximum of 1,500 men of this force being raised instead of only 1,000.

In 1885, Colonel Downes (now Secretary of Defence, Victoria), having previously retired from the army with the honorary rank

of Major-General, was succeeded by the present Commandant, Brigadier-General Owen, Royal Artillery.

The post of D. A. A. General has been filled up by Imperial officers (Major Fergusson, Rifle Brigade, and Major Jervois, Royal Engineers), up to last year. It is now vacant, the O. C. Permanent Force doing the work temporarily as acting D.A.A.G.

In 1886 a "Defence Forces Act" was passed (as drafted by Brigadier-General Owen), repealing all former Acts relating to the Militia, and the paid and unpaid Volunteer Forces, and consolidating and amending the law as to the same.

By this Act the paid Volunteer Force is styled by its proper title, "South Australian Militia," with its Reserve, the latter consisting of men who have already served one or more terms of three years. The minimum was raised to 850 men (in addition to re-engaged men) and the maximum left at 1,500.

If called out by proclamation for actual service, the Militia may be ordered to serve in the other colonies in case of danger, for the defence of a neighboring colony might in some cases be the most rational means of defending South Australia.

The Defence Act, 1886, aimed also, especially at the simplification and consolidation of the laws relating to this and the other forces of the colonies.

III. Reserve Militia.

Provision for a paid force of this description, to be raised by ballot, of the able-bodied men of the colony in case of great emergency, was made in 1884, by the Act above mentioned, in which such force was termed "Militia."

This Act, being in many ways obsolete and not in a form easily applicable, was repealed by the Defence Forces Act, 1886, which latter provides in a practical form for the raising by ballot of a paid Militia Reserve on proclamation either to complete the Active Militia to the strength authorised to be raised, or, in case of danger, in addition thereto in such number as may be required.

This Force is not in existence at present, but the colony has been divided by proclamation (under the Defences Act, 1886) into the necessary territorial military districts, and in case of emergency the required machinery for raising it could easily be put into operation.

IV. Volunteer Force.

This is a purely Volunteer Force, not paid except by a capitation grant for such members as make themselves efficient.

The Government supplies arms and accoutrements free, as well as a certain proportion of ammunition.

At various periods Volunteer corps of different descriptions have existed in the colony.

In 1877 they had all been merged into the "South Australian National Rifle Association," organized by an Act passed in 1878 under the control of a council, with provision for military inspection by an officer appointed for the purpose.

In 1881 and 1882 amending Acts were passed, changing the Rifle Association into a Rifle Volunteer Force, and placing it under the command of the Military Commandant.

By the "Defence Forces Act, 1886," the council ceased to exist, and the Volunteer Force as it now exists was established, being the former Rifle Volunteer Force with provisions tending to make it more complete as a military organization.

The last mentioned Act also allowed of the raising of Mounted Infantry Volunteer Corps. Eight of such corps, numbering about 300 officers and men, have already been raised under this Act.

All matters simply appertaining to rifle contests and matches for this and the other forces were handed over, by the Act of 1886, to a new "South Australian National Rifle Association," without any military or quasi-military functions, but somewhat on the model of the English N. R. Association and of similar associations existing in other colonies.

In the event of threatened invasion or rebellion, the Militia Force and the Volunteers are liable to be called out for service, and would then be employed under the provisions of the Imperial Army Act.

The S.A.M. Forces, therefore, in addition to (I.) Head Quarters Staff, consist of—

	Officers.	Men.
II. A small Permanent Garrison Artillery (S.A. Artillery) of	2	45
III. An active Militia of the following ordinary establishment*		
Cavalry (2 Troops, Lancers)	6	60
Field Artillery, 1 Battery (Eight 16 Pr. Guns)	6	75
Garrison Artillery, 1 Battery	6	120
Infantry, 2 Battalions	40	680
Medical Staff and Ambulance Corps	6	15
	64	950
Also Active Militia Reserve, 2 companies†	6	120
	70	1,070

* This is the authorised establishment, but it is not complete at present.

† This is the establishment aimed at for the present.

IV. Reserve Militia.

No establishment laid down. To be raised, if necessary, in case of great emergency.

V. Volunteer Force.

	Officers.	Men.
Mounted Infantry (eight companies)	14	283
Infantry. { One organized battalion of six companies }	81	1,367
{ Twenty-one companies organized in territorial districts. }		
	<u>95</u>	<u>1,650</u>

The Cavalry are armed with lances and M.H. carbines.
Garrison Artillery and Infantry with M.H. rifles.

B. Defences.

The land defences of Adelaide and its ports (Port Adelaide and Glenelg) consisting of:—

Name of Fort.	Armament.	Remarks.
Glanville	Two 20-ton 10in. R.M.L. guns; two 64-pounder R.M.L. guns.	Earthworks, with bricks, &c.
Largs	Two 12-ton 9in. R.M.L. guns; two 80-pounder R.M.L. guns.	Masonry, revetment, &c.

A new battery is also proposed to be built in the neighborhood of Glenelg, and to be armed with powerful breech-loading ordnance of the latest description, viz., two 9·2-inch breech-loading guns and two 6-inch breech-loading guns, all on hydro-pneumatic carriages.

THE POLICE FORCE.

One of the earliest acts of the first Legislative Council of this colony was to pass an Ordinance which authorised the formation of a Police Force. This measure was agreed to in the year 1839, and it was then that the force was first put on a proper basis in this colony.

The colony is divided into six divisions—The Metropolitan Division, which includes Adelaide and the suburbs; the Port Adelaide Division; the Central Division; the South-Eastern Division, which has for its head-quarters Mount Gambier; the Northern Division, which has for its Central station Clare, and which comprises the districts between Balaklava and Port Pirie and Yorke Peninsula; and the Far Northern Division, which extends from Terowie to Alice Springs, and includes what was formerly known as the Western Division. The force throughout the colony is, of course, under the control of Commissioner Peterswald, but the divisions are placed under the immediate supervision of Inspectors Hunt, Saunders, Sullivan, Besley, and Woodcock, each of whom is allotted a separate division, for the good conduct of which he is responsible to the Commissioner of Police. They are assisted in their duties by Sub-Inspectors Doyle, Shaw, Rollison, and Field. The Metropolitan and Port Divisions, from the fact of their containing the largest proportion of the population, of course, absorb the greatest number of the force, and there are stationed in them, in addition to the commissioned officers, 7 sergeants, 6 corporals, 35 troopers, and 160 foot police; in the Central Division there are 1 sergeant, 2 corporals, 41 troopers, and 12 constables; in the South-Eastern Division there are 1 sergeant, 2 corporals, 17 troopers, and 4 foot police; in the Northern Division 2 sergeants, 3 corporals, 29 troopers, and 17 foot police; and in the Far Northern Division 3 sergeants, 2 corporals, 55 troopers, and 13 constables. In order to preserve the proper working of the force a system of visiting has been introduced by which every station in the colony is visited once a month by the Inspector, Sub-Inspector, or one of the sergeants, with the view of drilling the men, inspecting their

quarters, and examining the books, reports of each visit having to be forwarded to the head office, where they are carefully examined. The fact which must strike the most superficial observer is the extreme disproportion of the numbers of the Police Force in this colony with those of the neighbouring provinces of Victoria and New South Wales, the mounted troopers alone in the latter colony exceeding the whole of our force by over 100 men. The population of South Australia, of course, is not so great as in those two provinces, but the exceedingly large area which has to be kept under police supervision taxes the resources of the department to the utmost, and it is only by the most strenuous exertions of the officials, and the hearty co-operation of the men, that it can exercise a control over such an extent of territory.

The Troopers.

"The duties and powers of a mounted constable differ in no respect from those of an ordinary police constable." These are the words used in the Police Manual when dealing with the work of the trooper, but the exigences of the service have rudely set aside this rule, and have thrust upon this branch of the force duties of the most multifarious character. In the country the mounted man has to act in many instances as bailiff; he is also Crown Lands Ranger; he has to collect jury lists for the Sheriff's Department; agricultural statistics for the Under Secretary; to co-operate with the Inspectors of Schools in seeing that all the children in the neighbourhood in which he is stationed are sent to school; to keep an eye on all cases of destitution, and communicate with the Destitute Board in reference to them; to destroy vermin, and give certificates to scalphunters; and to carry out any other special work which a paternal Government may call upon him to perform. None of these duties are allowed in the slightest way to interfere with his ordinary police work. When in charge of a station he has to patrol the country in the neighbourhood of his post, and keep a daily journal of all transactions; he has to make himself acquainted with the people and the physical character of the district, and keep a watch over suspicious persons, besides marking down a description of their appearance; his horses must not be neglected, and station and stables must be kept in a perfect state of cleanliness; and, above all things, he has to be ready to start away to any part of the district in a case of emergency. His duty also calls upon him to

arrest all offenders, and in the great majority of instances to act as Crown Prosecutor. It will thus be seen that the idea that a police trooper in the country districts has little to do, and even less responsibility, is but a popular fallacy, and it is clear that the public get more than an ample return for the amount of pay that is received by the men. The most arduous work falls upon the troopers in the Far Northern Division, where they have to keep a strict watch over the natives, and to hold themselves in readiness to visit any part of the interior where deaths under suspicious circumstances may be reported to have occurred.

The Foot Police.

The number of foot constables considerably exceeds that of the troopers, this fact being of course due to the larger proportion of population that they have to exercise control over. The metropolitan and Port forces are under the control of Inspector Sullivan and Sub-Inspector Doyle and thirteen non-commissioned officers, who are either sergeants or corporals, and the duties of the men may be briefly summed up as being to protect property and to prevent crime. The patrolling police are divided into watches, who have to be on duty for eight hours during either the day or the night, as the case may be, and they are under the immediate supervision of the corporal, who is responsible for the presence of a man on his beat, and for the general conduct of his duties. Since 1882 the system of employing troopers to act as night patrols in the less populous parts of the city and in the suburbs, owing to the numerical weakness of the foot police, has been adopted, and has been found to answer exceedingly well.

The Detectives

Are under the control of a sergeant—Mr. F. J. Upton—but their work is so important and of such a delicate nature that they really are under the constant personal supervision of the Commissioner of Police himself.

The duties of a detective are most onerous. He has to make himself acquainted with the members of the criminal classes; he is expected to know if there are any accessions to its ranks from the other colonies or from abroad; and he has also to note anything suspicious that may happen among them. If a case is put into his hands at the office he has to interview the complainant, and then from information supplied to him he sets about unravelling the

mystery. The task is sometimes one of much difficulty, but he is supposed to overcome that and to bring the criminal to justice. The records show that as a rule he is successful in his efforts, although there are cases in which he is foiled. Every morning the Commissioner holds what may be termed a levée at the Detective Office, at which all the men attend. The object of this gathering is that they may consult together as to the cases which are then in course of investigation or which need inquiry. It is a fixed rule that should one of the detectives meet some clue which would be of use to a comrade he is expected to communicate it to him at the earliest possible moment, otherwise he is liable to severe censure; but no interference by one man with another is permitted, as if such a thing were allowed it would only lead to much jealousy.

The Police Fund.

This fund was established by Act of Parliament, its object being to provide for the compensation of police officers who claimed to retire under the provisions of the Civil Service Act, or who were obliged to resign on account of ill-health, or from injuries received in connection with the performance of police duties. A portion of it was also devoted to rewarding police officers for meritorious services, or for reimbursing any member of the force the costs and expenses which he might have incurred in defending himself in the discharge of his duty, provided the Chief Secretary does not consider him blamable in respect to such action. The funds are invested from time to time in the names of the trustees, who are the Commissioner of Police, the Under Secretary, and the Under Treasurer for the time being. Previous to the Police Act, No. 15 of 1869-70, being passed, the fines which the police were entitled to were distributed annually among the members of the force, but now all of them are paid to the credit of the fund. On April 20th, 1870, there was a balance of £1,970 in hand in the Bank of Australasia, where the account is still kept. Only one claim for legal expenses was made, and now there is a good round sum to the credit of the fund.

BOTANIC GARDEN AND ITS PROGRESS.

(Extracts from a sketch by Dr. Schomburgk, Curator.)

This being the year of South Australia's jubilee, in which it is not only of public interest, but of public importance, that the progress made by the province in the fifty years of its existence should be placed on record, I have considered it advisable to furnish a brief sketch of the Botanic Garden from its foundation down to the present year. The establishment of a botanic garden in the neighborhood of the city was contemplated when South Australia was first surveyed. A site for this garden was marked on the early maps of the city on the north banks of the River Torrens, as may be seen by reference to the original plan of Adelaide, in the Survey Office. This site was used for the purpose for a few years, but nothing was done to make the Botanic Garden a success until the end of the year 1854, when the matter was taken in hand by the Governor, Sir Richard Graves MacDonnell. The preliminary arrangements were completed early in the year 1855, and the first meeting of the Botanic Garden committee took place on March 5th. The first members were Mr. John Bentham Neales, Mr. Matthew Moorhouse, Mr. William Wyatt, M.R.C.S., Mr. Charles Bonney, Mr. Joseph Hall (mayor of Adelaide), Mr. John Bristow Hughes, and Mr. William Young. husband, the last-named gentleman being elected chairman. A few days after the first meeting the members of the committee proceeded to select the present site which was determined upon and set aside for the Botanic Garden. It includes about forty acres of land, being portion of the Government reserve, which extended from North-terrace to the southern bank of the River Torrens, and from the Company's Mill-road, on the east, to the city slaughterhouse, on the west, and was placed under the superintendence of Mr. George Francis, F.H.S.

In July, 1856, the first report of the directors of the garden was published—it contained a mere official representation of the work that had been accomplished. In itself it was not much, but what had been done, had been done well. The importance of the task

which was confided to them seems at last to have been brought prominently before them, and in May, 1857, application was made to the Government for a special grant of £1,000 for the erection of a conservatory. This was readily granted, as well as £1,000 in addition to the grant, £2,500, that had been made for the year, which was asked for to meet the expense for the succeeding year.

The intention of the Government to erect a suitable building for agricultural and horticultural shows had been held in abeyance for a considerable time, for in May, 1859, an application was made to the Government for funds to erect the building. The building was erected, but it was not placed under the control of the directors of the garden. It remained in the hands of the Government, but was eventually placed under the charge of the South Australian Agricultural and Horticultural Society, which still retains it and controls its affair.

One of the drawbacks that had been experienced by the founders of the garden was the want of a proper supply of water. They had nothing to depend upon except the ordinary rainfall and the water which was collected in the lakes. In the dry weather it was a costly and laborious work to draw water from the ponds and distribute it over the large area that was then under cultivation. Large numbers of the plants were exotic, of a delicate nature, and could not properly become acclimatised without a sufficient supply of water to carry them through the rigors of the South Australian summers. The Adelaide waterworks were then almost completed, and the Government sanctioned an application to have the water laid on to the garden. These works, being constructed on the principle of gravitation, with constant service at high pressure, supplied all that was wanted, and after the connection was made with the water mains, a marked improvement in the condition of the plants became soon apparent. The supply is abundant, and of good quality, and has been the means of causing a considerable saving in labor. It has also rendered the acclimatisation of many trees, shrubs, and plants, a complete success, which, without it, would in many instances have been extremely difficult, and in others impossible. Since the water has been laid on, although in some years of drought the supply has been somewhat restricted, it has always been sufficient to keep the garden in proper condition.

On the 5th of August, 1865, Mr. Francis forwarded his resignation to the board. It was accepted with expressions of regret, and with a suitable acknowledgment of the value of his labors on behalf

of the establishment. Shortly after his resignation, Mr. Francis died, and an obelisk to the memory of the late director was erected in the garden, having attached to it a plate, bearing the following inscription :—

*In
remembrance
of the late*
G. W. Francis, Esq.,
*F.L.S., F.H.S.,
First Director of this
Garden, by whom it was
planned and laid out
in the Year
1865.*

A few weeks after the decease of Mr. Francis, Dr. R. Schomburgk assumed charge of the garden on the 14th September, 1865. Shortly after his appointment it was determined to add some new and useful features to some parts of the area which had not been brought into cultivation. An experimental garden was projected, besides the erection of a new and larger aviary, and in addition it was proposed to form a scientific arrangement of the natural system of plants in another portion of the site which had not yet been broken up. It was further resolved to make an extensive rosery, and to lay out and ornament the banks of the creek which ran through the garden. An aquarium for aquatic plants, which had been in hand for some time, was reported complete in the middle of the year 1866.

In the year 1867 the Sultana grape was introduced into the garden from the Cape of Good Hope. The statue of Niobe and that of Kisz's Amazon, the original of which attracted such attention in London at the great Exhibition of 1851, were presented to the board of management. They had been procured by the exertions of private persons who collected subscriptions to purchase them. Canova's Venus was also added to the garden. The years 1866-7 were marked by considerable activity in the development of the garden. The glass and hot houses and the conservatories were supplied with a new and improved system of warming by means of hot water pipes, and the aquarium, 82ft. by 42ft., for the cultivation of rare aquatic plants, gave additional means of reproducing and bringing to perfection many of those which grow in other parts of the world. Much attention was paid to the improvement of the lakes; though the drainage plan adopted by the Corporation of Adelaide was

altered, the improvement, such as there was, was not great. At the close of 1866 the number of plants in the garden was about 5,000. An experiment was made to cultivate the tea plant, which there is reason to think may become acclimatised in this colony, but the seed failed in South Australia, and Baron von Mueller, the Director of the Botanic Gardens in Melbourne, was not more successful with those which he planted. The failure was due to the use of unsuitable seeds and our dry climate. Very large additions were made to the zoological collection, which now had grown to considerable proportions. The museum also had been enriched by many valuable and interesting objects, and the botanic library had been increased to a total of 230 volumes.

His Royal Highness the Duke of Edinburgh paid a visit to the garden when he came to the colony in the *Galatea*, and he planted a *Cedrus deodara* as a memorial.

One of the greatest achievements in the history of the garden has been the construction of the Victoria House—built for the purpose of accommodating the giant South American water lily, the “Victoria Regia,” as well as for the reception and cultivation of epiphytal and terrestrial orchids and other plants which require a high degree of humidity and heat. The first “Victoria” was planted on the 22nd July, 1867, in the tank especially made for its reception, 36ft. by 26ft. Its progress surpassed all expectation. It produced in the course of six months no less than fifty-four leaves, the largest of which was 6ft. 4in. in diameter—and forty-one flowers with nearly thirteen inches in diameter. The growth of the plant was so vigorous, that notwithstanding the large size of the tank in which it grew it became necessary to cut away two or three leaves every week in order to make room for the young ones as they came. The lattice leaf plant, *Ouvirandra fenestralis*, a native of Madagascar, was also planted and cultivated but did not do well. The house afforded an abode for 1,169 other tropical plants, so that it proved to be an excellent investment of the funds expended upon it, and one of the most attractive of the objects collected in the garden. The ordinary expenditure upon the purchase of new plants was largely supplemented by donations of rare and valuable specimens contributed by private individuals, ladies and gentlemen who are at all times active and assiduous in increasing the general collection. Over 3,250 trees and shrubs were planted in the course of the year. The number of plants, trees, and shrubs distributed for the adornment of public places amounted to 3,387.

The experiments made with the Sultana grape were most successful, and in 1869 1,100 grafts were distributed amongst vine-growers, of which more than two-thirds grew well. A collection of wine grapes from the celebrated collection in the Jardin de Luxembourg, which were new to this colony, thrived well, and were distributed amongst persons who were likely to turn them to good account. The Guinea grass, *Panicum giganteum*, which had been introduced into Queensland, was sent to this colony by the Acclimatisation Society of Brisbane, and it has proved to be well suited to the climate of South Australia after ordinary care and attention have been bestowed upon it when first planted. The introduction of the variety of the mulberry known as the *Morus cedrona*, was followed by excellent results. All the young trees which were planted out thrived admirably, and it proved that the climate was well adapted to the production of a good quality of raw silk, for which there is always a good demand in Europe.

The annual report for the year 1870 dwelt upon the necessity that existed in the colony for the cultivation of forest trees. The suggestions made have not so far produced any startling or indeed even adequate results. The establishment, however, of a forest department has shown the value of the suggestions made, and the South Australian system of forest conservation is now most successful. It is not excelled in any of the Australian colonies—indeed, South Australia may be regarded as the only colony where the work of cultivating forest trees has been undertaken on a scale at all commensurate to the importance of the industry. In recent years a very large supply of the timber suitable for railway construction has been drawn from the forests, planted and maintained by the State, and in future years there is every probability that South Australia will be completely independent of extraneous supplies in this direction. This is one of the advantages which have sprung from the planting and distribution of forest trees by the committee of the Botanic Garden.

The new Palm House, the construction of which had been determined on, was ordered in Bremen according to designs by Herr G. Runge, architect, made for a gentleman named Rothermunde. Its dimensions were, length 100ft., width 35ft. The length of the rotunda and dome in the centre is 37ft. and of the wings 35ft. Its site was on a terrace about 6ft. above the level of the adjacent parts of the garden. The house, which was constructed of iron and glass, was surrounded by a broad walk and a

grass margin, adorned with flower-beds, statues, and fountains, with two broad flights of steps leading to the entrance doors on the north and south sides. The terrace itself was 150ft. long by 75ft. broad. In order to obtain the earth required for the terrace, a small lake was excavated in the creek. The erection of the house was commenced as soon as the material came to hand, much of the work being performed by the artificers and laborers employed about the garden. The ironwork of the house was put together under professional supervision. The interior arrangements are briefly these :—In the centre of the rotunda there is a magnificent specimen of the *Latina barbonica*, surrounded by a large group of plants with variegated leaves. These are arranged in a circle enclosed with gilt and painted tiles so as to give it the appearance of a large but elegant basket of flowers. This group is 50ft. in circumference. East and west from this centre piece there is an avenue 6ft. wide flanked with fern trees from New Zealand, Port Natal, and Queensland. The eastern and western ends of the building terminates each in a semi-octagon. The eastern bay contains a basin and a fountain surrounded by a fine collection of ferns, such as *Dicksonia antarctica*, *desaplula coaperi*, and *Leichardtiana*. In front of the basin some smaller kinds are planted, viz. :—*Adiantum amabile*, *A. concinnum*, *Farleyense* *Gymnogrammas*, *Lomaris*, *Blechnums*, *Pteris*, &c. The empty space between them has been planted with *Lycopodiums*, which now forms a splendid carpet. The western semi-octagon is converted into a grotto formed of stalactite, imported from the Black Forest, in Germany. It is about 10ft. high, and 8ft. broad; a small cascade falls from the back into a basin, over quartz and sandstone rocks. The top of the grotto is decorated with *dracenas*, palms, &c., intermixed with climbing plants, the effect of which is excellent, as the creepers drop in festoons over the stalactite. The inner wall of the grotto is planted with *philodendron*, *daguense*, *melanochrysum*, *pothos*, *argyrase macrophylla*, &c., which, growing on the stalactite itself, spread their leaves most symmetrically. The walks are enclosed with ornamental borders, two feet high, made of bricks and cement, with a tasteful coping, and the floor is covered with red and black octagon tiles, which have a very good effect. The brackets which support the roof and the sides of the wings of the house have been planted with choice climbing plants, which now help to shade and cool the house. As far as the Palm House itself is concerned, it may be regarded as being as perfect

as it can be made. It has, however, one fault, which the abundance of material available for furnishing it, soon made apparent. It is too small. If it were twice the size all the space could be used to advantage, and it seems not impossible that it will be found absolutely necessary to make further provision for exhibiting the noble collection of plants, &c., which now are necessarily placed in situations where the public at present have no access to them. The Palm House was completed in 1873, and it forms one of the prominent objects in the garden, and its contents one of the most attractive. The total cost of the building has been about £4,000.

The necessity for providing a new museum for the reception of specimens of plants and their products, models of fruits, fungi, &c., was pressed upon the legislature in 1877, and in that year a grant was sanctioned by the Parliament for a suitable building. This was the origin of the Museum of Economic Botany, which has now been constructed and furnished. Before this building was begun a considerable addition was made to the stovehouse, which had been erected in the previous year. It was 45 feet long by 25 feet wide, but it was extended to a length of 71 feet, so as to find room for 600 additional plants. Besides this a new entrance gate, of a highly ornamental character was placed on North-terrace. It is designed in good taste, and forms one of the most striking features of the terrace, leading, as it does, immediately to the brook walk, which runs down the centre of the garden. There is not a more elegant entrance gate to any domain in the colony. It was imported from England, and the cost was most moderate.

The new Museum of Economic Botany was designed by Mr. E. J. Woods, Architect-in-Chief, and built under his superintendence. It is in the Greek style, and the first of the kind in South Australia. It is 104 feet long by 40 feet wide, and 25 feet high. It is entered through a portico reached by a flight of six steps. It is lighted by six windows on the north, and the same number on the south side of the building, and by three in the western end. These are all eight feet high, and proportionally wide, so that the light is excellent. The ceiling is beautifully decorated. Between the windows the show cases are placed; these are fixed at right angles to the windows, and are nine feet in height, thus both sides of the cases can be made available. Under the windows, and in the recesses formed by these cases, other covered cases in the form of tables are placed lengthwise, and two rows of show cases rest-

ing on tables extend down the centre of the room from east to west. At the eastern end of the building a separate room has been set aside for the Herbarium. The plants which compose it are contained in portfolios arranged in shelves, and each portfolio is labelled on the outside with the orders and genera it contains, so that any particular genus which may be wanted can be found without difficulty.

The objects collected in this museum are of the most varied and useful as well as of an interesting nature. No justice can be done to the labor and pains by means of which the museum has been finished, nor to the scientific and intrinsic value of these specimens. A mere catalogue of its contents would convey a very inadequate notion of what it really is. It may be stated that a more instructive and attractive exhibition of the products of the vegetable kingdom, and of the uses to which they are applied, cannot be found in any other colony in Australia.

There are many thousands of objects arranged in the museum, and they are continually on the increase. The value and attractiveness of this museum is probably greater than that of any other part of the garden.

The ground surrounding the museum has been laid out in lawns and flower parterres which are designed in the Greek style in order to harmonise with the building itself. Statues, which represent the four seasons, have been placed on the lawn surrounding it. The collection in the Economic Museum has robbed the old museum of none of its valuable features, the cases and shelves of that building being well filled, and offering in their own way much for the amusement and instruction of visitors. The Economic Museum was opened to the public in 1880.

From that year down to the present time there has been little undertaken in the development of the garden which requires special mention. Small improvements in various directions are continually going on, which to the constant visitors do not attract much attention. A few months absence, however, soon shows what has been done in the interim, for although the garden itself does not now admit of extension, the constant additions and small alterations that are made to and in the portions of the area which are already occupied show that the work of improvement and ornamentation is increasing.

To the outside observer the garden looks merely as if much money and pains had been devolved to the laying out and arrange-

ment of extensive pleasure-grounds, and that the Government which supplied the funds had been laudably and liberally solicitous for the instruction and amusement of the inhabitants of Adelaide and its visitors.

This, perhaps, is the least praise that can be bestowed on the establishment, because it is the most common ; but the establishment of the Botanic Garden, whatever might have been the original inception of its founders, has developed higher aims and more solid results than could have been expected from the modest scale on which the first operations were undertaken. If the very moderate grants of public money which have annually been voted for the use of the committee which undertakes from year to year the general responsibility, are considered—if the fluctuations in the prosperity of the colony are duly weighed, and the difficulties of contending with trying and uncertain seasons are fairly regarded—it will not be denied that an amount of success has attended the exertions of those who have been intrusted with the care and control of the garden, which could scarcely have been anticipated.

This, so far, is a matter of congratulation to the colony, but it does not rest at that point. The garden has not only formed a centre of cultivation, but it has been the source from which reliable and valuable information has been disseminated over the whole colony. The reports which have been published from year to year have been to some extent taken up by details which related to the actual work performed in forming and extending the garden, but the greater portion of those reports has consisted of descriptions of new forest trees, shrubs, and plants (medicinal and otherwise), vegetables of various kinds, grasses, cereals, orchids, and plant flowers useful for making perfumes. These descriptions have been supplemented by directions as to the methods of cultivation, the times of planting, the soil and climate best suited to their habits and constitution. Such descriptions, followed as they were by timely and judicious distributions of the seeds, trees, &c., have been the means of diffusing knowledge of the most valuable and varied character, and have brought to the agriculturists, market-gardeners, and others, a knowledge of many resources of the highest value. Up to the present time, the really useful work that has been performed in this way has been great, though the results are not quite so apparent as they might have been expected to be. This may be attributable in some measure, to the very long cycle of dry and otherwise unfavorable seasons which have been so in-

jurious to every kind of agricultural pursuit. The serious commercial depression has also contributed its share in restraining experimental productions, because, with a restricted money market and scarcity of capital, new enterprises have necessarily been kept in the background. The real success of the gardens in all respects, encourages those who manage its affairs to hope that every future year will be able to furnish evidence of progress, both in the garden and in the colony, even greater than that recorded in the year of jubilee.

It is entirely due to the efforts made through the management of the garden, that the public attention has been so thoroughly awakened to the advantages and profits which may be derived from the systematic cultivation of the wattle. A small pamphlet on this subject has been printed and circulated by this means. Before this, mention had frequently been made of the subject, especially in a paper read before the Chamber of Manufactures on "Forest Tree planting." In the colony of Victoria, the matter was considered so important that the Government appointed a board especially to inquire into it. The board collected a vast deal of valuable information, which has been made public. The knowledge and suggestions circulated by means of the directorate of the South Australian Botanic Gardens, has been to promote and stimulate the planting of the wattle on a large scale by private persons, and more recently the matter has been taken in hand by the Government, which is now about to establish wattle plantations in various parts of the colony. The full effects of the efforts now called forth to establish the wattle industry cannot at the present moment be properly estimated. A few years must elapse before substantial results can be ascertained. It is certain, however, that a valuable industry has been established which will render one branch of agricultural cultivation in the colony a solid investment, instead of a speculation depending upon the uncertainty of the early seasons.

Another matter which goes to show the great value of the garden as a means of public instruction, which should not remain unnoticed, is a sketch such as this. Other productions have been introduced and distributed by the director, and thus brought into consideration in South Australia. Few except those who have cattle to provide for can estimate the value of some of the grasses which have been brought here through the Botanic Garden. Some, it is true, have not succeeded; others, however, have answered all the expectations

formed of them, especially the various kinds of sorghums or millets, including the broomcorn, which has been introduced from California. All kinds stand the dry weather and hot winds well, and provide a nutritious summer fodder. Previous to their introduction there was only one variety of the sorghum grown in the colony, known as the "Farmer's Friend."

A most important addition to our wheat plants has been made by the introduction of "Du Toit's" wheat, otherwise known as African bearded wheat. The accounts which have been received of the success of this cereal are most satisfactory, and it is now recognised as the most reliable of the varieties of wheat which the farmers possess. This variety was brought here by the Government and distributed by the garden, which had called attention to its great value.

Several important and useful varieties of fibre plants have been experimented on and distributed, though, probably owing to the general scarcity of water, their cultivation has not reached any large dimensions.

It would occupy too much space to enumerate all the plants—medicinal, dye, and others—which have been placed at the disposal of the farming industries through the agency of the garden. A beginning has, however, been made, and it is hoped that the efforts of the direction to encourage cultivation will bear substantial fruit in the near future. The results so far as they have been ascertained may not at present be great, but they have fully established the fact, that for successful agriculture there is no longer any necessity for farmers to rely, as many of them have done, upon the uncertainty of the cereal products in such dry seasons as we have recently passed through.

NATURAL PRODUCTS.

Cereals.

The great extent of land in South Australia suitable for the production of cereals made wheat raising one of our chief industries. It was engaged in by many who, without any previous knowledge or training, took up our virgin soil, and preferred to cultivate that crop which gave the least trouble to settlers inadequately provided with implements suited to the climatic conditions of a new country. Notwithstanding these drawbacks, they succeeded in making for themselves comfortable homesteads, and gathering around them the luxuries, as well as the comforts and pleasures of life.

From the establishment of the colony until 1850, when the first exports of wheat were made, only sufficient was grown to supply the wants of the inhabitants; but in the year 1845, Ridley's Adelaide stripper revolutionized the method of reaping, and enabled our farmers to indefinitely extend the area of appropriate land suitable for wheat-culture. Later on, the stump-jumping plough and the mullenizer further materially assisted in the process of extracting from the soil, with a limited expenditure of time and labor, a maximum of profit, until our exports for 1886, which may be considered a very low average year, because of the drought, were of the value of £2,205,249, including—Barley, £424; bran and pollard, £20,351; flour, £585,640; oats, £1,628; wheat, £1,576,873; meal, £141; hay and chaff, £20,192.

Owing to the dry, sunny climate of South Australia, the percentage of gluten in our wheat is much greater than in that of any other grown, either in the Australian colonies or India; and hence Adelaide wheat fetches the highest price in the market. But the markets of the world have undergone much change during the last fifty years. We are now in daily or hourly communication with each other by means of railways, steamships, or the electric telegraph lines; therefore, if there be local deficiencies in one part of the world, they are quickly supplied from the surplus stores

available elsewhere. Hence, for the last few years, a uniform price in the London markets has been steadily maintained, and I see no reason for anticipating a prospect of permanent increase in the market price of wheat. Competition is so keen throughout the world, and all the surplus supplies find their way to England from the wheat-growing districts of America, India, and Australia, from whence they are distributed throughout Western Europe, that it would only be by a total failure of the crops in one or other of the grain-producing countries that an immediate advance in price could take place.

This competition, however, has had a beneficial effect upon our agriculturists. Adversity has forced them to rely no longer exclusively on wheat-raising, but to combine mixed agriculture with stock and dairy farming, fruit culture, and vine growing.

Oats are grown in very limited quantities where the climate is cooler and moister than the average. Seldom for sale in the Australian markets, but principally for use as hay, and for feeding purposes.

Barley yields very good crops of excellent quality, but there is not enough grown to supply the wants of the local brewers. The barley from Kangaroo Island is in good repute, and most of our brewers have encouraged its production with such success that soon we hope to be independent of importations.

Maize grows luxuriantly at the north; and at the Hergott bore, where irrigation has been applied, some splendid specimens were grown; but in any part of the colony where water is plentiful, there feed is abundant.

In the south-east corner of the province, where the drained lands reclaimed from the marshes are planted with root crops, nearly 100,000 acres have been sold at an average of £2 per acre. In the Mount Gambier district potatoes are grown, averaging from nine to thirteen tons per acre. Beetroot, mangold, and all root fodder plants thrive luxuriantly south of Adelaide; and, under the beneficent system of water conservation and irrigation, all kinds of fodder crops can be raised throughout the settled districts of the north.

The ignorance which had existed of the capabilities of our colony is exemplified in a most remarkable manner by the facts which have come to light relative to the so-called "desert." That calumny was effectually cleared away during the construction of the overland railway line, and just lately there has been shown in

Adelaide specimens of several kinds of cereals, grown by the officers of the Woods and Forests Department, at a place which "so-called" experts stated would not bear a blade of grass.

The first exhibit on the right of the main entrance to the Exhibition building is one most interesting and instructive. Within the compass of a few feet are shown a formation of wheat, beans, peas, millet, and maize; the supports of the superstructure being made from woods grown on Yorke Peninsula. Upon these rest cases containing dried fruits, currants, raisins, figs, prunes, &c.; specimens of the finest Brandis almonds grown in the colony; pure and delicious transparent olive oil, silk cocoons, fleeces of wool, bunches of grapes, specimens of the carob bean, all tending to prove the truth of the opinion expressed by the Executive Commissioner of the Exhibition, Sir Samuel Davenport, that "We live in a country flowing with milk and honey, wine and oil, and that it is our own fault if we do not cultivate the gifts the gods provide us." Another eminent authority, Sir Robert Dalrymple Ross, Speaker of the House of Assembly, states that "Within sight of Adelaide city, on the Mount Lofty Ranges, there is room for a million of souls to obtain a comfortable living."

Olive Oil.

The Olive has for a long time been grown near Adelaide. As far back as 1851, samples of the oil were shown at the great Exhibition in London, and obtained honorable mention. At Philadelphia in 1876, at Paris in 1878, at Sydney in 1880, at Melbourne in 1881, at Calcutta in 1883, and at the Colonial and Indian Exhibition last year, olive oil from South Australia invariably carried off the premier prize. At present the price it fetches per gallon is 10s., and most of the production is sold for distribution in this and the adjoining colonies.

Honey.

In South Australia bee-keeping has become an important industry. Our extensive forests of eucalypti growing on the ranges near Adelaide favors its development, and much assistance was given by the Chamber of Manufactures in importing Ligurian bees to be kept at Kangaroo Island, from which Australian bee-keepers can draw their stocks. The report of the expert at the Colonial and Indian Exhibition states, "Some fine samples of honey were exhibited in the court of this colony."

Silk.

The following information is extracted from the report of the expert appointed by the Royal Commission for the Colonial and Indian Exhibition, Thomas Wardle, Esq., F.C.S., states—

“An excellent exhibit of white cocoons was made by Dr. W. Lennox Cleland, Resident Medical Officer of the Parkside Lunatic Asylum. These cocoons had been sent over in considerable quantity, and I undertook to have them reeled, and the resulting raw silk made into silk fabrics. I obtained 3lbs. 14ozs. of raw silk, and Messrs. J. Birchenough and Sons have thrown and manufactured it into a beautiful series of handkerchiefs, &c., and have sent me the following report of it:—‘The silk reeled at Leek from Australian cocoons is on the whole very satisfactory. As a winding silk it is superior to China silk, and about equal to a good Japan or Italian. Its elasticity is not so good as the last two classes of silk, and in places the thread has a tendency to split, and where this occurs the result is disappointing. There seems to be an absence of gum, which will account in some degree for this slight fault. The silk is clean, and would be passed as a good silk for a throwster, there being an absence of slubs, knibs and dirt, which is greatly in its favour. The general sizes seems to be 16 to 20 deniers, but it will range from about 10 to 24 deniers, single thread. As to its value, it is difficult to assess it until it has passed through every process; but to judge from the present appearance and values, it should be worth about 20s. per lb.’ The cocoons were reeled by the French reeler who was sent over to the Exhibition by the kindness of the Chamber of Commerce at Lyons, through the instrumentality of Monsieur J. Dusuzeau, Directeur of the Laboratoire de Sériciculture of Lyons. After the close of the Exhibition the reeler came down to Leek and reeled the cocoons in the adjoining house to my own, where I had daily opportunities of observing the work. The reeling machine used was similar to that employed at the Exhibition, but of a more simple and economical construction. I have had it made to send out to India as a Government pattern, and would strongly recommend its adoption to those in Australia who wish to reel cocoons. It contains all the elements of the best appliances of Italy, the use of which I have studied, but so simplified as to be capable of cottage use, for which purpose in

"India I have designed it in order to give so agreeable an occupation to the women there whose caste customs of almost perpetual indoor life are well known.

"Many particulars respecting this method of reeling, and of the silks of silk-producing countries will be found in my Descriptive Catalogue of the Indian Silk Culture Court above referred to.

"The following is the result of my laboratory examinations of the cocoons before-mentioned, exhibited in the South Australian Court :—

Species of cocoon and Colony in which it is produced.—Mulberry-fed silkworm cocoon (*Bombyx mori*), South Australia.

Description of cocoon.—Form: elliptical-oblong with slight medial depression. Color: white. Texture: compact. Reeling: good. Bave composed of two cylindrical structureless brins.

Weight of cocoon.—0.366 gramme.

Dimensions of cocoon.—35 x 16 millimetres.

Length of bave reeled.—497 metres.

Weight of bave reeled.—0.162 gramme.

Titre of bave, milligrammes per 500 metres.—163 milligrammes.

Titre of bave, in deniers.—3.06.

Mean diameter of bave.—0.0473 millimetre.

Mean elasticity.—24.07 per cent.

Mean tenacity.—13.43 grammes.

Percentage of silk reeled from the cocoon.—44.26 per cent.

"Trials of the bave—(I.) 10 meters from the end at the outside of the cocoon; (II.) at the middle of the cocoon; and (III.) 10 meters from the end at the inside of the cocoon.

	I.	II.	III.
Diameter of bave in ten-thousandths of a millimetre	483	508	427
Percentage of elasticity. Average of six estimations	25	27.5	19.7
Tenacity or breaking strength in grammes. Average of six estimations	13.6	15.4	11.3

	I.	II.	III.	IV.	V.	VI.
Weight in milligrammes of each 100 metres of bave reeled from the cocoon, commencing at the end of the bave which is at the outside of the cocoon	30	32	36	37	{ 97 metres remained, weighing 27 milli- grammes. }	—

"I must not conclude my notice of this Court without mentioning my indebtedness to Sir Samuel and Lady Davenport for their great courtesy and kindness during the Exhibition, and the

“affability with which I was always received when making inquiries for this report. The interest they take in silk culture is such that South Australia promises one day to be an important silk-producing colony.

“Whether all the circumstances which are favourable to such a consummation offer sufficient inducement to emigrants acquainted with sericulture I am unable to decide, but I think the subject well worth consideration, especially as the objection which I heard put forward so frequently in 1878 at Paris, I have fortunately been able to meet. It was then said that although the climate and country were quite favorable to the culture of the silkworm, labor was scarce and too dear for its application to cocoon-reeling to be thought of. This objection also held good with regard to other parts of Australia.

“Feeling this obstacle in itself to be insuperable, I set about casting for a remedy, and my visit to India supplied one, which was as follows:—Australia need not trouble itself with cocoon-reeling at all, but should export the cocoons as raw produce to the reeling districts of Bengal, where they can either be reeled by commission, or, what is better, bought outright. I found in Bengal a non-continuous state of silk-reeling owing to the bunds or cocoon harvests having their respective reeling seasons immediately following them, notably after the July or rainy bund, and the November, or cold-weather bund.

“Briefly, the natives are only occupied six months in the year, and they would gladly welcome arrivals of cocoons from Australia, or other sources, to give them continuous employment.

“I have it on the authority of the extensive firm of Messrs. Robert Watson & Co., through their agent and director Mr. Morey, who has the management and control of their numerous filatures in the Rajshahi district, where a considerable proportion of the population is employed in cocoon-reeling, that it would be a very great help indeed if they could be supplied with cocoons to keep their factories or filatures going all the year round, instead of about six months only out of the twelve as at present.

“Mr. Morey informed me that importing cocoons from China could be made to pay, and that their factories could take *all the cocoons which the colonies could produce for some time*, as the very best qualities of silk could be reeled from them.

“As regards the value of cocoons reared in the colonies, at the present prices of raw silk—Italian 22s. 6d. per lb., China 15s. 6d.

"per lb., Bengal 15s. per lb., French 22s. 6d. per lb., Japan 19s. 6d. per lb.—it would not be less than 2s. 6d. per lb. in the dried state.

"The best arrangement would probably be to pay so much per lb. for the silk, allowing the reelers a fair profit; but, at any rate, there would always be a market for the cocoons, the chrysalides having been first killed, and the cocoons well dried before packing.

"For two parcels of cocoons, which I have had to buy from Marseilles for the Royal Commission of the Colonial and Indian Exhibition, for the unbroken continuance of the cocoon-reeling in the Indian Silk Culture Court, I had to pay 5s. per lb.

"Silkworm eggs can be easily obtained from any of the countries the price of whose raw silk is above quoted.

"The yield of raw silk from 1lb. of cocoons is about 1½ oz.

This information, coming from such an eminent authority, ought to call attention to the importance of sericulture in our colony; and the further extract from Baron von Mueller may be of advantage to those desirous of engaging in silk culture, an industry most suitable for ladies and children.

"Superior varieties of mulberry can be grafted with ease on ordinary stock. *M. Indica*, L., *M. macrophylla*, Moretti, *M. Moreitiana*, Jacq., *M. Chinesis*, Bertol., *M. latifolia*, Poir., *M. Italica*, Poir., *M. Japonica*, Nois., *M. Byzantina*, Sieb., *M. nervosa*, Del., *M. pumila*, Nois., *M. tortuosa*, Audib., as well as *M. Constantinopolitana*, Lamarck, with which, according to Prof. C. Koch, is identical *M. multicaulis* of Perrottet, are merely forms of *M. alba*, to which probably also *M. Tatarica*, L., and *M. pabularia*, Jacquin, belong. The variety known as *M. Indica* produces black fruits. The raising of mulberry trees has recently assumed enormous dimensions in California, where between seven and eight millions were planted since 1870. The process of rearing the silk insect is simple, and involves no laborious exertions. The cocoons, after they have been properly steamed, dried, and pressed, readily find purchasers in Europe, the price ranging according to quality from 3s. to 6s. per lb. The eggs of the silk moth sell at a price from 16s. to £2 per oz. In 1870, Japan had to provide two millions of ounces of silk ova for Europe, where the worms had extensively fallen victims to disease. As an example of the profit to be realised, a Californian fact may be cited, according to which £700 were the clear gain

“from 3½ acres, the working expenses having been £93. The
“Commissioner of Agriculture of the United States has estimated
“that, under ordinary circumstances, an acre should support from
“700 to 1,000 mulberry trees, producing, when four years old,
“5,000lbs. of leaves fit for food. On this quantity of leaves can
“be reared 140,000 worms, from which ova at a net profit ranging
“from £80 to £240 per acre will be obtained by the work of one
“person. Mr. C. Brady, of Sydney, thinks the probable proceeds
“of silk culture to be from £60 to £150 for the acre. The dis-
“crepancies in calculations of this kind are explained by differences
“in climate, soil, attention, treatment, and also rate of labor.

“The results of Mr. Brady’s experience on the varieties of
“*Morus alba* are as follows:—In the normal form the fruits are
“white, with a purplish tinge more or less deep; the bark is pale;
“the leaf is also of a pale hue, not very early, nor very tender, nor
“very abundant. It may be grown on moist ground so long as
“such is drained, or it will live even on poor, loose, gravelly soil,
“bordering on running water. The Cevennes variety is a free
“grower, affords a large quantity of leaves, though of rather thick
“consistence; all varieties of the *Morus Bombyx* like these leaves,
“whether young or old; it is also called the rose-leaved variety;
“the silk which it yields is substantial in quantity, and also good
“in quality; it does best on rich dry slopes. The bushy Indian
“variety has a fine leaf of a beautiful green, which, though light
“in weight, is abundantly produced; it can be cut back to the
“stem three or four times a year; the leaves are flat, long, and
“pointed, possess a fine aroma, and are relished by every variety
“of the ordinary silk insect, though all do not thrive equally well
“on it; the silk derived from this variety is excellent, but not
“always so heavy in quantity as that produced from the rosy
“variety; it prefers rich, low lying bottoms, is a greedy feeder,
“but may thus be made to cover an extraordinary breadth of
“alluvial or manured land in a marvellously short space of time.
“At Sydney Mr. Brady can provide leaves from this Indian variety
“all through the year by the removal of cuttings, which will strike
“their roots almost at any season; it also ripens seeds readily, and
“should be kept at bush size; it requires naturally less space than
“the other kinds. A fourth variety comes from North China; it
“has heart-shaped, flat, thickish leaves, which form very good food
“for the silkworm. Mr. Brady, as well as Mr. Martelli, recom-
“mend very particularly the variety passing under the name of

"*Morus multicaulis* for the worms in their earliest stages. The former recommends the Cape variety also; the latter wishes likewise the variety called *Morus Morettiana* to be used, on account of its succulent nutritious foliage, so well adapted for the insect while yet very young, and also on account of producing the largest amount of food within the shortest time. The Manilla variety, above mentioned as *Morus multicaulis*, comes into bearing several weeks earlier than most other sorts, and should therefore be at hand for early hatched worms. An excellent phytological exposition of the numerous varieties of the white mulberry tree is given in De Candolle's *Prodomus*, xvii. 238-245 (1873)."

Since the foregoing appeared in print I have been informed by Dr. Cleland that:—

"As carrying out Mr. Thomas Wardle's suggestions respecting India as being a likely and suitable market, you will be pleased to hear that communications have been opened up with certain leading people in Calcutta by Messrs. Harrold Bros., and that I have promised my next year's crop of cocoons as an experimental shipment. These will be dispatched next January".

Wattle Bark.

The exports of wattle bark during the last ten years have amounted to £421,078. In 1886 the value of shipments amounted to £51,176. Over the hill sides, in the plains, on the Murray flats, and in fact all over South Australia, the indigenous wattle can be grown, and become a source of revenue for our farmers, squatters, and others interested in the development of the country. The poorest land upon the hill sides of Adelaide ranges will well repay any attention which may be given to it.

For the information of South Australian growers and shippers, I have extracted the following from the report of the expert appointed by the Royal Imperial Commissioners for the Colonial and Indian Exhibition at London last year:—

"They have an admirable tanning agent in the bark of the '*acacia mimosa*, or 'wattle,' as it is spoken of in the country. The leather produced by this bark is some of it of bright color and high excellence, and large quantities are sent to England, where it sells as readily as the production of their tanyards. The black wattle bark is the richest in tanning pro-

“perties, and the best is that shipped from Adelaide, where the chopping, grinding, packing, &c., is as well done as it is capable of being.

“The manufacture of extract from both the wood and bark of the mimosa was mentioned by one of the representatives of the Australian courts as having been commenced, and if successfully carried out, it might be the means of economising freight on such a long sea voyage. Otherwise tanners in this country are very well satisfied with the bark, whether chopped or ground, sent by the best known shippers; and the skilful combination of this most valuable tanning agent with English oak bark, myrabolanes, and valonea, has enabled experienced tanners to produce sole leather little inferior to that made from pure oak bark, in half the time, and at a material reduction of the cost of tanning compared with that of the old system.”

The Conservator of Forests, Mr. J. E. Brown, estimated—

“*Profits to be derived from Wattle cultivation.*—We now come to consider the most important subject of this report, namely, that of the profits which may be derived from the cultivation of the wattle tree.

“At the distances apart which I recommend the trees to be grown—namely, 4ft. to 6ft.—there will be an average of 1,200 trees to the acre. In order, however, to make due allowance for blanks, I shall base my calculations upon there being 1,000 only to each acre.

“At the present time, bark is selling at £7 10s. and £8 per ton, and there is every chance of a still higher price being obtained for it during the next few years. Still, to be on the safe side, I will put its value down at £5 per ton only.

“I give £5 per ton as the probable yield per acre. That this is a low estimate will be admitted, when it is considered that this only allows for 10lbs. of bark to be taken from each tree.

“I shall now give a tabulated statement of the probable revenue and expenditure during a period of seven years, in connection with a wattle plantation, formed upon 100 acres of land specially purchased for the purpose, and upon which wattles had not previously grown.”

REVENUE.

	£	s.	d.
To value of property increased and improvements, say	400	0	0
“ “ 500 tons of bark at £5 per ton	2,500	0	0
	<u>£2,900</u>	<u>0</u>	<u>0</u>

EXPENDITURE.

	£	s.	d.
By purchase of 100 acres, at £3 per acre.....	300	0	0
“ cost of substantial fence all round, say $1\frac{1}{2}$ miles, at £50 per mile	75	0	0
“ ploughing 100 acres, at 8s. per acre	40	0	0
“ cost of 30lbs. of seed, at 1s. per lb.	1	10	0
“ labor sowing the seed in rows, say at 5s. per acre..	25	0	0
“ scarifying between the rows twice, at 4s. per acre..	20	0	0
“ thinning and pruning for two years, at 10s. per acre per annum	100	0	0
“ forming firebreaks during the third to seventh year, say £5 per annum	25	0	0
“ sundries	50	0	0
“ interest on money expended during the seven years, say	280	0	0
“ cost of stripping 600 tons of bark, at 25s. per ton..	625	0	0
“ cost of carting same to market, at 10s. per ton	250	0	0
Balance, being clear profit	1,108	0	0
	<u>£2,900</u>	<u>0</u>	<u>0</u>

Industrial Fibres.

The fibres sent by the Government of South Australia to the Colonial and Indian Exhibition were analysed by that eminent chemist, G. F. Cross, Esq., of Lincoln's Inn Fields, whose report was so satisfactory that the Executive Commissioner, Sir Samuel Davenport, instructed his firm to test the samples in a practical manner, for the purpose of finding out those natural products which, from their abundance, might be adapted to the requirements of the colony. I append the report, as follows:—

“The South Australian Commissioners exhibited two fibrous substances—‘Mullett’s’ fibre, the long sword-shaped leaves of the *Lepidosperma gladiatum*, and ‘Porcupine Grass.’

“These fibres on analysis yielded the following percentages of cellulose respectively: 34·4 and 36·5. The *Lepidosperma* examined in transverse section under the microscope, was found to contain a fair proportion of fibrovascular bundles, of which the constituent bast fibres have an average length of 1·5-2·5 mm.

“These results were such as to justify a paper-making experiment, for which, with commendable foresight, the Commissioners had brought a sufficient quantity. The raw material was sent to the well-known paper mill of Mr. E. Joynson, of St. Mary Cray, Kent, he having kindly volunteered to personally superintend the work of converting it into paper. The substance was ‘pulped’ by the process of boiling, at 40lbs. pressure, with basic sulphite of soda (20 per cent.); afterwards washed, bleached, and beaten in the ordinary way. A small portion was made into sheets on a

“hand frame, and yielded a paper of a slight yellowish colour, which left nothing to be desired in point of strength.

“The bulk was run on the machine, the operation being witnessed by Sir Samuel Davenport and Mr. Scott. Here also an excellent paper was produced, exceptionally strong, and taking a good finish in the glazing rolls. The result was altogether satisfactory, and Mr. Joynson asked to be supplied with sufficient raw material for making a ton of paper, in order farther to demonstrate its paper-making qualities. This request has been complied with, and a quantity of three tons is now on its way. It is intended to make this into paper for exhibition in Adelaide this year. The Porcupine Grass having been found on preliminary investigation to be more nearly allied to the well-known Esparto, was pulped on the usual plan of treating the latter, viz., boiling under pressure with caustic soda solution. The grass, however, having been collected by amateurs, and therefore with a plentiful admixture of roots and seeds, yielded a very unpromising mixture. By carefully picking over a small portion, and beating it in a model beater, after bleaching, some excellent pulp was obtained and made into sheets on the frame. In this way the paper-making qualities of the fibre was satisfactorily demonstrated.

“In these two raw materials, therefore, the colony has a supply of good paper-making fibre: their value will of course be determined very much by local considerations. The papers which they make are similar to those obtained from *Adansonia* and *Esparto* respectively, the yield being some 10·15 per cent. less. This will convey a better idea of their market value than an attempted money estimate, which would probably be misleading.

Fresh Fruits.

The Commissioners appointed to arrange for the representation of this colony at the Colonial and Indian Exhibition in London last year wisely expended several hundred pounds in making experiments to show whether our surplus stock of fresh fruits could be exported with profit to the grower.

The authorities in London erected a market within the Exhibition, and there each shipment, as it arrived, was placed and sold. Hundreds of thousands of English people realised for the first time that Australia was a country so extensive that all the fruits of a temperate climate, and most of those of a tropical or semi-tropical

character, were grown here; and the fruitgrowers of South Australia saw the possibility of an unlimited extension of orchards nestling amongst the ranges near Adelaide, the produce of which would always command a profitable market in the Old World. There are upwards of 600 market gardeners with holdings ranging from three or four acres up to fifty, of which the united acreage exceeds 12,000; but in view of the successes which attended the experimental shipments of apples, pears, and oranges last year, it may confidently be looked for that the vast area of uncultivated lands lying within easy distance of a shipping port will rapidly be planted with fruit trees which will come into bearing, the produce of which can be delivered in London at a season when there is no other fresh fruit available of a similar kind.

Judging from the open market returns, as seen at the Colonial and Indian Exhibition, the average price realised for a case of apples or pears is 25s., provided the fruit is properly selected, packed, and shipped in cool chambers. The report of the expert states:

“This colony made a very successful show of fresh fruits. Its grapes, apples, and pears were of special interest, not so much for what they were in themselves, as for the possibilities which they foreshadowed, and the promise which they held out of an extensive and prosperous fruit trade between the Australian colonies and the mother country. The resources of civilization in this instance are evidently being directed to a comparatively unworked field; and there is no reason why this trade in fruit should not grow into permanent benefit alike to producer and consumer. The special points wherein some shipments failed have already been pointed out by Mr. D. Tallerman, who had charge of the Colonial Market, and it is unnecessary to repeat them here. The knowledge, so far gained, will be of great benefit in arranging for future consignments. In packing fruit it is suggested that ‘the cases for fruits should be of the ordinary flat shape, with one or two partitions. I find,’ says Mr. Tallerman, ‘that the fruit from Adelaide, in the old-fashioned cheap Tasmanian cases, with the apples papered, has arrived in good condition. Some South Australian shippers simply line the cases with paper, and pack their apples loose, and they have arrived equally well; but I recommend that all large and choice fruits be papered.’

Another method of packing is that successfully adopted by Mr.

Jno. Bowman, of Auckland, New Zealand, some of whose fruit was twelve weeks on the voyage :

“His mode of packing seems to have resulted satisfactorily. Mr. Bowman’s apples were packed in a close case of Kauri pine, with no holes for ventilation. Each apple was wrapped in tissue paper, and completely surrounded with chaff, so tightly packed that the fruit could not shake about. The apples were from one-and-a-half to two inches apart at the nearest point. Each layer of apples was separated by a wooden shelf. The chaff was not dried artificially before packing. On opening the case, from 10 to 13 per cent. only were found unfit for use, the rest of them being in perfect condition, and still retaining their bloom. The apples had not sweated at all, nor had the dampness from the bad fruit affected the good cases near them. The fruit being large and fine attracted great attention from visitors, and when placed in a glass case in a prominent part of the Court, was generally taken for models similar to those shown by the Australian colonies.

“Although packed in the colony three weeks before subsequent arrivals, some of these apples were still good in the case after three weeks’ exposure here. Mr. Bowman’s apples are stated to have been packed in the last week in March, or more than three weeks before those of other exhibitors. A small barrel had been packed nearly twelve weeks when it was opened, and from the apples being wrapped in tissue paper and closely packed in chaff, only 14 per cent. of the contents were damaged.”

Dried Fruits.

The report of the expert on these articles states :—

“The dessert raisins, Zante currants, and Sultana raisins, shown in the South Australian Court, were of a most interesting character, and compared very favorably with the best qualities usually imported into England. It is evident that South Australia, no less than the Cape of Good Hope, can supply both the European and American markets to a large extent with these dried fruits, and they have done well to display in so enterprising a manner their special capabilities.”

There is no doubt as to the capability of this colony to produce both raisins and currants, and especially almonds. It is now known that no part of Australia is more favorable to the growth of the almond than the neighborhood of Adelaide. At the present

time the production of currants is only a sixtieth part of the requirements of the colony, and there is no reason why they should not be grown and exported to all the Australasian colonies and to England. All these industries can be carried on with very little outlay in money, and by the families of small holders of land.

Wines.

One of the most important industries of the colony is that of the culture of the vine. The area of land available which, by soil and climate, is capable of producing good wine is unlimited. Nature has been very generous in her gifts to us, and we have not fully availed ourselves of the advantages offered. At the present time there are only about 600,000 gallons of wine annually produced in the colony. By the latest statistics, up to 1885 there were 4,850 acres planted; but during the last few years vine-planting has been so extensively carried on that within two or three years the output will be very largely increased, and the success of South Australian wines at the Colonial and Indian Exhibition, where they were placed before the public, pure and adulterated, will so stimulate viticulture that we may confidently look forward to a time when our exports of wine will rank in importance with those of wool and wheat. But the risk of inducing farmers and small holders of land to plant vines must not be forgotten. Unless they are satisfied that a market for their grapes is immediately available, the inducement to plant will fail, and the reaction will be worse than disastrous to the colony, if those who have planted vineyards find that there is not a ready sale for their grapes. The Government might fairly give their moral support—and some part of the material support—in the initial stage of establishing a Joint Stock Company for the purpose of purchasing grapes and crude wines from vignerons, storing it until properly matured, employing skilled labor to treat the wines in the cellars here, and further assist to establish agencies abroad.

The British Government are holders of £4,000,000 worth of shares in a commercial undertaking—the Suez Canal. Our Government might legitimately assist in the establishment of a South Australian Vineyards' Association in a similar way. The consumption of our own wines is gaining favor here every day; persons who had never before kept any but foreign wine in their cellars are now using South Australian wines in preference to the imported. The exports to the Old World, New Zealand, and the

other colonies have increased in a surprising degree, because that adversity has taught our vigneron a bitter lesson, which they have profited by. There are fewer winemakers in the colony now than there were in 1866, when the acreage under vine cultivation was 6,629, and the number of gallons of wine made was 895,000, but the quality in 1887 is much better. The practice of our larger winemakers buying the produce of the small grower of grapes has enabled them to ship wine of a uniform character year after year, which has attained a standard of excellence in the market of the Old World. The initial difficulty of introducing Australian wines has been overcome, and their repute is such that every effort ought to be made to extend the trade.

The ravages of phylloxera in France have decimated the vineyards there, and we have now an opportunity to take advantage of the feeling in the mother country in favor of a trade federation with her colonies; and the prestige gained for Australian wines at the exhibition clearly points out to us a plain duty—that of encouraging, by all the means in the power of the Government of this colony, an extensive culture of the vine, which may be done in many ways. One is the appointment of a Professor of Viticulture in connection with the present Agricultural College, whose duty it would be to analyse the soils of proposed vineyards, advise the class of vine to be planted in that particular soil, instruct our farmers and small holders in the proper method of planting, pruning, and rearing the vines, procuring the most approved methods of pressing the grapes, and generally advising intending vigneron on the management of the cellar.

What is wanted is men from the southern countries of Europe, from climates similar to our own; men who have been brought up from their infancy in the culture of the vine, and the drying and preserving of the grape and other fruits. Special inducements in grants of land might with advantage be made to a few well selected men to emigrate to this colony. With a competent Professor of Viticulture in connection with the Agricultural College, who should be required to advise small landholders what land is suitable for planting to vines and fruits, and the kinds best adapted to different localities; when all this is done, we shall have assisted in rearing in our midst a yeoman race of farmers working their own land, growing grain, raising cattle, poultry, and dairy produce, and living contentedly beneath their own vine, fig, and olive trees.

MANUFACTURING IN SOUTH AUSTRALIA.

Although manufacturing has not been recognised as one of the leading interests of South Australia, it has, nevertheless, been an important factor in its development. The great producing interests of the colony have been largely indebted for their extension and development to the special machines, implements, and tools, which our colonial machinists and engineers have devised for their use. The squatter, the miner, and the farmer, have each called in the assistance of local artisans to make convenient and suitable appliances for performing many of the operations connected with their occupations; the squatter obtains excellent engines, boring tools, pumps, and windmills, to help him to find that greatest of all wants of our interior, water; wool scouring and drying machines, and wool presses for station use, the bullock dray, the wagon, and the buggy, are all found to be indispensable requirements. The miner avails himself of the services of the large engineering establishments in which every detail of plant required for this important industry are obtained; powerful steam engines with the winding and pumping gear, down to the simplest tool used by the miner, are supplied by these works; and there are several improved machines which have attained a more than local reputation, on account of the economy and efficiency obtained by their use. In an especial degree the farmer has been indebted to the inventive genius of the local machinist for the production of implements and machines for his use; it was only by reason of the invention of the Ridley reaper, or as it is better known outside the colony, the Adelaide stripper, that wheat can be grown profitably in South Australia. Without this machine it would have been impossible for the farmer to have gathered in the golden grain—which has been pronounced to be the finest in the world—from the immense area of ground which he cultivates. To those acquainted with the slower methods of harvesting followed in the older countries of the world, the value of this machine will be apparent when they are told that one man can reap and thrash ten acres of wheat in a day by its use.

There are a large number of factories for the production of agricultural machines and implements in the colony; hardly a town-

ship but has its blacksmith's and machinist's shop, where not only repairs are executed, but in most of them a considerable amount of new work is done. To some of those small shops the colony is indebted for the invention of novel and valuable implements, such as stump-jumping ploughs, mullenisers, and some most efficient grubbing machines, all of which are specially designed for cultivating the scrub lands of the colony. Winnowing machines, mowing machines, ploughs, scarifiers, harrows, &c., are all made in large numbers, and adapted by our manufacturers to the new conditions under which much of the farming operations of this colony are conducted.

Although generally the tendency is for manufacturing establishments to become centralised, yet we have workshops of considerable magnitude in most of the large towns, such as in Port Adelaide, Gawler, Kapunda, Mount Barker, Strathalbyn, Balaklava, Port Augusta, Quorn, and others.

In this iron age, engineering works and iron foundries are necessarily prominent amongst the factories of any country. To give even a brief sketch of the iron works of the colony would occupy a much larger space than can be devoted to it here. Suffice to say we have more than one forge capable of turning out forgings of five or six tons in weight, steam hammers of varying capacity are at work in dozens of factories, railway carriage axles and buffers are being made by the hundreds, and heavy forgings for mills, steamers, dredgers, &c., are turned out whenever the demand is made for them. Our iron foundries are not behind the forges in their capacity for producing good work; castings weighing up to eight tons have been made, and the light castings will hold their own for excellency of design and finish when compared with the productions of older countries. Cast-iron pipes are extensively made in more than one establishment, and in the largest factory of this kind an output of £8,000 per month can be maintained throughout the year.

The whole of the requirements of the colony in connection with the various schemes for water conservation and irrigation are being met by our local factories. Workshops for the construction of boilers, bridges, viaducts, girders, and other riveted work are also carried on in our midst; leviathan punching and shearing machines and hydraulic riveters are in use in several of them; and a number of large contracts for iron bridges and other works have been successfully carried out. All the ironworks referred to are replete with

machine tools for turning, planing, slotting, and shaping the work produced in them, most of those tools having been imported from firms having a world-wide reputation for the excellency of their productions; at the same time, we find here, as in other directions, our artizans frequently design and make special tools suitable for the economical production of the work they are called upon to supply. It is a matter of surprise to many visitors to find such costly machinery in use in the works, but the comparatively high standard of wages here requires the manufacturers to study how to obtain the best possible return from the wages paid.

At Port Adelaide there are a number of shipbuilding establishments, which are capable of meeting any demand that may be made upon them by vessels visiting the colony. Several steamers and sailing ships have been built, both in wood and iron, and, just lately, one of the intercolonial iron steamers was cut in the middle, and lengthened 40ft. Beautifully finished and fast-sailing yachts have also been made for the yacht clubs. The slips are capable of taking up any vessels trading to our ports; there is also in course of construction a dry dock, by the old-established and enterprising shipbuilder, Mr. Fletcher, which will accommodate any of the large ocean-going steamers. There are also Government yards situated at Port Adelaide, under the management of the Marine Board, where dredgers and barges for the deepening operations have been made, at prices that compare favorably with the cost of imported work of the same sort.

The Government have extensive workshops at Adelaide and Islington, for the manufacture and repair of railway rolling-stock. In those works all the repairs are effected, and a considerable number of railway carriages, first, second, and third-class, as well as trucks of all descriptions for carriage of goods, are made. A number of carriages and trucks have also been made by private firms for the use of the railways of the colony. Practically, the whole of the rolling-stock in use on our railways is now manufactured in South Australia, with the exception of locomotives. Several of these have been re-built, but none have yet been constructed throughout, although there is no doubt but within the next few years this work will also be undertaken.

Passing from the construction of vehicles for railway purposes to those for ordinary roads, we find every variety of carriage, either for business or pleasure, produced by our colonial builders, from the stately four-in-hand drag, replete with all the conveniences and

comforts for both the inner and outer man, down to the homely village cart, and from the family carriage of our American cousins, the rockaway or carryall, to the spider-like trotting sulky. All are produced by our local makers, rivalling, in style and excellence, the famous productions of Longacre, London, or Broadway, New York. Our Australian carriage-makers are gradually developing a style of their own, which partakes in part of the English and American; avoiding on the one hand the weight of the English carriage, and on the other the excessive lightness of the American, they produce vehicles suitable for the country and climate, and to stand the work required of them.

During the last ten years we have followed the admirable system of tramway communication initiated by America, and the Tramway Companies are now supplied with cars made in the colony, equal to those used in the birthplace of this institution.

Although amongst our natural productions we do not find much timber suitable for manufacturing or building purposes, yet, as nearly all the timber used in the colony comes in bulk, a number of sawmills have grown up, in which sawing, planing, moulding, and many other operations in preparing timber for use, are carried on; timber bending for wheelwrights and carriage builders is also done here; and in our joiners, carpenters, and cabinet-makers workshops much of the work is of a very high class, and is suitable for withstanding the very hot and dry climate of this country.

Visitors to the colony are favorably impressed with the excellency of the designs, and the artistic and substantial character of the workmanship shown in our public buildings, our banks, and business premises in Adelaide and the principal inland towns. There are also many gentlemen's residences in the city and suburbs, in the hills, and at the seaside, which display a high degree of skill and taste on the part of the designers and artisans.

The quarries of this province have experienced serious vicissitudes, and are comparatively undeveloped. The leading quarry of freestone was the celebrated Teatree Gully quarry, from which the stone for the Town Hall, Post Office, portion of the Bank of South Australia, King William-street, and the Imperial Chambers, besides innumerable private residences, was obtained. In respect to durability and uniformity of color, this stone is of the best standard; and the district of Houghton and surrounding neighborhood abounds with similar deposits, should the demand for it revive. Many of the earlier-built houses were built of a slate

formation, from the long-established Glen Osmond quarries, upon whose property is an abundant supply of indurated sandstone, which largely supplies road metal for city and district roads. In this, and the output of building stone, these quarries may be said still to be inexhaustible. Large freestone quarries have also been opened at Mitcham, from one of which handsome buildings in Pirie-street, besides various churches and private residences, were built. At Stirling East there are also very extensive freestone formations, much in use in Adelaide and the suburbs, and of which the Wesleyan Church at Norwood is a fair specimen.

At Port Adelaide the buildings are chiefly built of a very handy and durable indurated sandstone, which is procurable in large quantities in handy-sized blocks, with natural bed and face, in the neighborhood of Dry Creek. In these quarries is also a large output of metal. The chief quarry, for both building stone and metal, is worked by stockade labor at the Dry Creek Prison. There is also a very large deposit of coralline limestone underlying the southern portions of the province, cropping out on southern Yorke Peninsula in cliffs forty and fifty feet in height, with natural beds ten to eighteen feet apart, and capable of turning out stone of the largest dimensions, requisite for any work. The same formation crops out again on the bank of the Murray, and joins a similar one near Geelong, and from which the Anglican Cathedral in Melbourne is being erected. This formation would no doubt develop into a valuable adjunct in cheap building, if the demand for building stone were to revive. The Post Office at Largs Bay, the Wesleyan Church, Port Adelaide, the stores of the South Australian Company; and a large house at Walkerville, the property of T. S. Horn, Esq., are built of this stone. Recently a valuable quarry of freestone, which was first used for the viaduct of the Strathalbyn to Goolwa railway at Currency Creek, has again come into favor, and is now being very satisfactorily used in the handsome building in course of erection at the corner of King William-street and North-terrace for the Bank of New South Wales. Granite is also being profitably worked from the quarries at Port Elliot, from whence the chief of the kerbing in the city, and pitchpaving for crossings, is obtained. It is capable of carrying high finish, and has been very successfully used in the base of the new Parliament Houses now in course of erection, and the Bank of Australasia. In the latter building are noticeable two very handsome columns the whole height of the doorway, which

are evidence of the capabilities of these quarries to turn out stone of any dimension. Marble, too, is very abundant in various parts of the province, chiefly near Kapunda and Angaston. It is worked for building and ornamental purposes; and the various hues, from black to a pure white, have already insured for these quarries a reputation for excellence which warrants the hope that they will find customers outside the province. The facade of the new Parliament Houses is built of marble from the Kapunda quarries, and the carvings of the capitals of the columns, under the skilful hand of the sculptor, Mr. Maxwell, will demonstrate the excellence of the stone for monumental work. The capital of the chief column weighs nearly five tons. Marble is also much used in the city for pavements, much of that newly laid being of this material. There are also at Mintaro and Willunga very large deposits of slate for flagging, which is also used by the city corporation; and especially large flags are procurable from these quarries. The Willunga quarries have established a reputation in the Victorian market for roofing-slate, and no doubt this industry might be very much augmented if persons building would use this system of roofing in preference to so much galvanized iron.

There are many specimens of architectural merit in the city and suburbs, in which the talent of the architect, the skill of the workman, and excellent quality of the materials used must vie with one another for meritorious appreciation. Notably may be mentioned the National Building Society, Victoria-square, with base of Melbourne bluestone, and superstructure, as regards facade, of Sydney freestone; the Supreme Court, built of a very excellent stone from near Government Farm; the Public Offices, Victoria-square, with base of Melbourne bluestone, and facade of Sydney freestone; Stow Church, of Dry Creek sandstone, and Teatree Gully facings; the Bank of Adelaide, of Teatree Gully base, and Sydney freestone; the Bank of Australasia, of Port Elliot granite base, and Ōmaru (New Zealand) stone for the superstructure; the Bank of South Australia, of Teatree Gully, and carvings of Sydney stone; the National Bank, and Imperial Chambers, of Teatree Gully stone; the Australian Mutual offices, of bluestone base, from Victoria, and superstructure of Sydney stone; the English and Scottish Bank, of Sydney stone. All these buildings, and many others, such as the University, and the Public Library and Museum, although chiefly built of imported stone, speak unmistakably of the talent of the architects, and the excel-

lent handicraft of the artizans, thus illustrating the great strides we have made in such matters since the time when some of the older houses on North-terrace and in Hindley-street were once the chief buildings of the city, and the residences of our leaders of society some thirty or forty years ago.

At Kapunda there is a magnificent marble quarry, from which an unlimited supply of this beautiful material can be obtained. The new Parliament Houses are now being built with this stone. Very expensive and complete plant is used for getting the stone out. It is obtained in large blocks, some of them weighing 7 tons. Slate is obtained in different parts of the colony, principally at Willunga and Mintaro; the Mintaro slate especially is of an excellent quality, being unsurpassed in the world for evenness and finish, and is suitable for tops for billiard-tables, and other work requiring first-class slates.

Brickmaking is carried on in many parts of the colony. Several companies and private firms employ very complete machinery for this purpose, and Hoffman's kilns, and several modifications of them, are used for burning. Bricks are produced suitable for the very best buildings, and also for tanks, and other work requiring the highest quality.

Terra-cotta work is made in several places in the colony, and one of the finest exhibits in the South Australian Court is that designed and executed by Mr. Shearing, of Hindmarsh.

Brickmaking is an industry largely carried on at Hindmarsh, where several factories are in existence, turning out all classes of bricks, white, red, and black, as well as glazed bricks and tiles, suitable for all designs. Firebricks are now manufactured from a mixture of Hindmarsh clay with Teatree Gully kaolin, and are said to be equal to the imported article. The industry also embraces the manufacture of all kinds of wine-jars, jam and pickle pots, water-coolers, airbricks, and retorts for gas-making, together with the necessary drainpipes required for the extension of the sanitary system of deep drainage. Of late the æsthetical tastes of the people have been gratified by the establishment of a manufactory for terra-cotta work. It is only another instance of the wisdom of the ancients, for where we read of the disentanglement of buried cities we find at the same time records of designs in the imperishable clay brought to light after many centuries; here in a new country, where art and skilled labor is at a premium, the establishment of a terra-cotta manufactory points to an advancement in the new path of art and industry.

Earthenware pipes are also produced for our own requirements, the demand for which is very large, on account of the extensive works in connection with deep drainage of the city and suburbs, unlimited supplies of excellent clay being obtainable for this purpose.

The tanning industry has been in existence for a good many years in South Australia. Of late years great improvements have been effected in the plant and machinery used, and a much better article, a greater output has resulted therefrom. Works of this character are of especial value, because they utilise a material which is entirely a South Australian product; and the wattle tree, which is also a South Australian product, is largely used in the operation of tanning. Every description of sole and dressed leather is made in large quantities, and considerable success has also been attained in the production of light leather and moroccas; the only kinds not yet attempted are enamelled and japanned. Scouring machines are used for doing the wet and dirtiest part of the tanner's work; and band-splitting machines capable of slicing a hide into three pieces are also used. Our South Australian leather obtains a high reputation both in the colonies and England. The value of bark of the wattle tree for tanning purposes is well known, and it has for years formed an article of export to England from this colony. Within the last few years a new industry has sprung up in the colony which promises to become of great importance and value; instead of waiting until the tree is from seven to ten years old when it becomes profitable to strip the bark, by the new process the tannin can be profitably extracted within two years of the tree being planted. The process consists in taking the whole tree, timber, bark, branches, and leaves, and slicing them in a machine into shavings, and by steam and pressure extracting the tannin, which is obtained in a liquid form like treacle, the use of this material being said to produce better results than the bark itself.

Boot and shoe factories.—There are a large number of boot and shoe factories in Adelaide and other towns in the colony. All the most recent machinery for the economic production of these indispensable articles are in use in them, and they give employment to a large number of persons of both sexes.

Although, on account of the limited population of the colony, special factories for the production of one article do not obtain to so large an extent as in older countries, yet many articles are made to order by our local manufacturers, which could not be carried on

as a separate industry. Such things as billiard-tables, looking-glasses, pianos, glasscutting, and many others, demanding skill and taste in their production, are successfully produced by our mechanics.

Factories for the manufacture of iron and tinplate goods are now thoroughly established, and produce fire and burglar proof safes and doors, ranges, ovens, bedsteads, galvanised-iron work, tinware and japanned ware, in all their respective branches, equal in every respect to imported goods—one factory alone, that of Messrs. A. Simpson & Son, giving employment to nearly 200 men and boys. This enterprising firm has spared no expense in introducing the latest improved machinery for the production of their various goods, and have succeeded in being able to supply other colonies—the fire-proof doors for the new Government Offices, Hobart, and the Town Hall, Albany, being supplied by them. Not least amongst the industries carried on by Messrs. Simpson is the manufacture of jam, tea, and coffee tins, and packages of all kinds, and the work of galvanizers and tinner.

Two organ building factories.—Several churches and other institutions have been fitted with organs by our local firms, which, by their excellent design and workmanship, afford pleasure to the eye as well as the ear.

Jewellery and silverwork is manufactured in all styles and designs, and compares very favorably with the imported article. Mounting emu eggs in sterling silver is an industry in which South Australia is not equalled by any other colony, and great numbers of these eggs are sold to English and European buyers. Silvertown silver is used for all silversmiths' work, and such articles as tea and coffee services, trays, salvers, cups, claret jugs, &c., &c., are made to equal, if not to surpass, anything imported. Jewellery is made in great variety, and of better quality and strength than that imported. Stone-setting is also carried on with great success. Altogether the industry promises to grow to a large scale, and will, when times improve, give many men employment.

There are at present in the city five cooperages, and several smaller ones in the country districts, turning out casks and vats for vignerons, from the usual quarter-cask size to that of the large vats with a holding capacity of upwards of 5,000 gallons. The timber used is chiefly oak, but of late years a species of native blackwood has been tried with success. The very large vats used in the wine cellars are mostly made of red gum, of which one with

a holding capacity of 10,200 gallons was lately manufactured. The principal uses for casks are as follows:—Wine, beer, oil, tallow, beef, pork, butter, &c.

Soap and candle works have been in existence since 1840, turning out an average of 35 tons weekly of household soap for washing purposes, 30cwt. of fancy soaps for the toilet, and 1,500 boxes of candles. Of late years, with the advantages of protection, the soapmakers have been enabled to provide themselves with machinery to supply nearly two-thirds of the demand of the colony in soaps, candles, lubricating oils, and axle-grease, of a quality such as may fairly compete with that of the imported.

The manufacture of confectionery has made considerable advance of late years, and is now firmly established in the colony. There are a number of factories, giving employment to about 100 hands. The larger factories are fitted with the most improved and complete machinery, and are producing not only the ordinary but also the higher-class confections, equal in quality to the imported article, and at an advantage in price to the consumer. A great portion of the machinery used in the manufacture of confectionery has been designed and made in the colony, thus advancing the interests of others not directly connected with this industry.

NORTHERN TERRITORY.

This immense tract of country is bounded on the south by the 26th parallel of south latitude, on the east by the 138th and on the west by the 129th meridian of east longitude, and stretches to the Indian Ocean. It contains an area of 35,116,800 acres, and was provisionally annexed by royal letters patent to the Province of South Australia in 1863. In the next year settlement was commenced, and 250,000 acres were sold (half in Adelaide and half in London), at 7s. 6d. per acre, in sections of 160 acres. With each section a town allotment of half an acre was sold at the same price. In April, 1864, the first party left for the Territory, under the command of the Hon. B. T. Finniss. The party disagreed as to the site of the settlement, and Mr. Finniss was recalled. But little progress in colonization was made till 1869, when the Surveyor-General was dispatched to complete the survey of 600,000 acres of land, and to lay out the site of Palmerston, the present capital.

In 1872 the great undertaking of uniting Adelaide and Port Darwin by an overland telegraph line was completed. This work, which cost upwards of half a million of money, was carried out entirely by South Australia. In the neighborhood of Pine Creek the men employed in making the telegraph line discovered gold.

Gold.

In 1873 a most unreasonable gold mania started in Adelaide. Companies were floated and mismanaged. Much money was lost by the shareholders. Reefs now known to be as rich as any in the world were abandoned. The auriferous character of the country, however, still attracted attention, and in 1880 the Government Resident reported there were 150 Europeans and 1,500 Chinese engaged on the reefs and alluvial diggings, and that fully £20,000 worth of gold was exported during the year, half of which found its way to Hongkong.

The present Government Resident, in his report at the close of 1884, writes:—"The export of gold during the year reached "21,675ozs., of the value of £77,935. Considering the meagre "amount of capital invested, the great natural difficulties which

“impede travelling and carting, the enormous cost of provisions, and the primitive appliances, this may be accepted as an authoritative indication that rich deposits of gold exist in the Northern Territory. When Pine creek is within a ten hours’ journey from Port Darwin and the auriferous country will be traversed by the railway, the Government Resident who writes the report for the year after the railway has been opened will have a different record to give.”

In the early part of 1886 the Hon. J. L. Parsons visited the goldfields, and writes as follows:—“At Bridge creek I was shown handsome nuggets from the alluvial diggings, where men had been making £12 per week. At the Howley I saw 50ozs. of coarse gold bought from a Chinaman. At Burgan’s creek the bark huts of a large Chinese digging population indicated they were still getting gold. Of course it is useless to ask a Chinaman if he is getting gold. He invariably replies, ‘Me catchee no gold,’ or ‘Me catchee little bit,’ with a melancholy shake of the head as if he were much to be pitied, when, perhaps, he is making his fortune, and looking forward to being in China in a few months. Passing through the old Fountain Head, the Chinese were scattered over the workings, and busily employed at Grove-hill and the Twelve. At the Union I heard the gratifying news of a crushing of two tons of quartz from No. 3 North Union which had yielded 37ozs. of gold; and news also of several other claims turning out rich stone. At Pine creek Mr. Olaf Jansen had just struck on a rich leader, some fine specimens of which I picked out from the ground myself, and a splendid specimen from which, at Mr. Jansen’s request, I forwarded to the Hon. the Minister of Education. At the Christmas claim there was a stock of stone which Mr. Jansen assured me would go 11ozs. to the ton. I also visited Fitzgerald’s claim, but even stone yielding 3ozs. to the ton was not sufficient to detain him from the Kimberley.

“Leaving Pine creek we crossed over rough country and camped on the Driffield. The next night our camp was at the Edith. From the Edith, on the following day, we made the Katherine station, and were hospitably received by Mr. and Mrs. Murray. Even the casual and amateur observer cannot fail to see the indications of probable mineral wealth extending beyond our known metalliferous area. Granite, slate, quartz, diorite, are conspicuous, and the whole stretch of country up to

“the tablelands will, when the railway comes near Pine creek, be
“diligently prospected, and carry, I feel sure, a large mining
“population. At the Katherine river I was given a handsome
“nugget, rich gold in quartz, which had been obtained on the
“Stow creek by a small prospecting party, but the immense cost
“of getting stores to the place had compelled them to relinquish
“further search. Of the existence of good gold from the country
“between the Daly and Fitzmaurice all round under the table-
“lands, no experienced miner who has travelled over the country
“has the slightest doubt.”

The testimony of the Rev. J. E. Tenison Woods, F.G.S., &c.—a very high authority—is of the most encouraging character. He says—“The gold in the Territory is found in exactly the same
“manner as in other parts of the world. It is needless to repeat
“what these conditions are. The stone in those reefs which have
“been worked is rich, and would pay well to work in any country
“but this, where wages and cartage are so enormously high. The
“gold generally is of high standard. The total amount exported
“from August, 1880, to September, 1885, is 121,779ozs., of the
“value of £432,959. This, of course, is not by any means a full
“statement of the gold obtained in the Territory. The amount is
“large, but divided amid the number of mines worked, and the
“number of miners employed, it is relatively very large, and
“shows the richness of the country.

“Of two things I am convinced—first, that not one of the mines
“hitherto worked or abandoned has been exhausted of the gold;
“secondly, not 25 per cent. of the auriferous reefs of the country
“have been fairly tested. If a prospector does not get a good
“assay from a bagful of stone, which he digs from the top of the
“‘blow,’ the whole is condemned. The test, of course, is utterly
“insufficient. The chances are much against the prospector
“striking on the shoot of gold at the first blow of his pick. Who
“does not know the thousands of instances where rich mines have
“lain idle for years from bad prospecting? A slight examination
“convinces one that many of the reefs in the Territory contain
“rich metal, even though the prospector has turned away from
“them. The gold in most of the reefs is remarkably clean
“and pure, with little sulphur or arsenic or other troublesome
“minerals.

“Some mines are an exception, and the sulphurous tailings in
“them are considerable. It would be well if the miners would

“follow an important piece of advice, which has reference to
“tailings. They should be stacked like compost heaps, with
“equal quantities of leaves, branches, grass, or any decaying
“vegetable matter. In a couple of years the pyrites will be con-
“siderably or completely decomposed, and can be treated in the
“mill without any roasting. Pyrite heaps are often very rich in
“gold, and will soon pay for their keep.

“It may certainly be said that the quartz reefs of the Northern
“Territory have never had justice done them by first-class ma-
“chinery. Indeed, it is stated that the Union reefs have been
“brought to ruin by the battery employed, which let large quan-
“tities of amalgam go down the creek; but with small capital,
“enormously high wages, and equally high cartage, it could
“hardly be otherwise. When these shall have been adjusted to
“the rates of the value of the quartz, then the day of the mines of
“the Northern Territory will have come. Everything is hoped
“from the railway to bring this about; there is plenty of material
“to work upon. I regret being unable to give the proportion of
“gold produced to the quartz crushed. I believe the average is
“high, generally over an ounce. Some of the crushings of the
“top stone have been enormously rich. Thus, at the extended
“Union, in 1877, 40 tons of quartz yielded 740ozs. of gold. This
“is exceptional, and belongs to the returns which miners always
“expect to obtain from the capping of reefs, where the gold lies,
“which has weathered out of the stone through countless ages.

“In reference to this, I have been asked to give an opinion as
“to whether deep sinking will give increased returns. For in-
“creased returns, I should say that there is nothing peculiar in
“the ground which would lead one to expect it. In those mines
“where the shoots of gold have a tendency to form pockets of
“metal, the ground may become richer at any moment, especially
“where the quartz lode is intersected by veins of diorite; here
“rich gold will nearly always be found, and often as much in the
“diorite as the quartz. All questions connected with deep sinking
“are best answered by the diamond drill, but seeing how few of
“the mines are able to pay for an efficient battery, it is hardly
“to be expected that they could pay for drill exploration. Be-
“sides, the question of deep sinking is not important. Just now
“there is plenty of payable stone within easy reach in most of the
“mines if labor and cartage were only obtainable at a price com-
“mensurate with the value of gold.

“In the alluvial workings the conditions are precisely similar to alluvial gold in other parts of the world—the sinking is shallow, sometimes mere surfacing, and the gravel scarcely waterworn. This is the more extraordinary as the rainfall is much greater here than in Victoria or New South Wales, where the drift gravel is so much rounded, but the elevation is much greater.

“The alluvial diggings are generally in shallow valleys with low ridges on each side. Curiously enough, rich gold has been found in valleys where on the ridges forming the valley not a trace of a quartz reef could be found. Finely-divided gold, no doubt, exists to some extent in the slates, and this must be the explanation of fine gold in alluvial far from any reefs, just like stream tin. True stream tin is not derived from reefs or lodes, but from finely-disseminated particles of tin in granite. Nuggets are not common, and never of very large size. The very fine gold would appear to be inexhaustible, as the Chinese always seem able to make a living, no matter how often they turn over the old headings.

“It only remains to say that, as the reefs containing good gold are far from being all discovered in the Territory, so it is with the alluvial. There are gullies and flats innumerable which have never been even prospected; they are all connected with the auriferous slates, and even with quartz reefs. To name them would be endless, but I especially mention the country between Mount Wells and Mount Douglas, amid the ranges on the east side until the ranges fall away, a distance of between forty and fifty miles.”

The quantity of gold exported through the Custom-house during the past six years may be set down as *five tons weight*, and valued at half a million sterling.

Other Minerals.

But the Territory abounds in other minerals. At Mount Wells, Mount Shoobridge, and the Finnis River the deposits of tin are extensive and rich. This metal, in the opinion of the Rev. J. E. T. Woods, will eventually be one of the great sources of mineral riches in the Territory, especially as it occurs in the form of reef tin, which is so comparatively rare. The most of the tin discoveries in Australia have been made in stream tin, which is never of a permanent character. The Port Darwin Tin Mining Company have done a great deal in the way of building, erection of ma-

chinery, and construction of dams. After many disappointing delays, the company is about to commence in earnest the dressing of ores from their lodes.

The copper mines have so far been confined to those on the River Daly. The Wheal Danks Mine promises the owners a good return, even with the present low price of copper. In one spot a lode is reported 2ft. wide, discernible on the surface. A shaft 80ft. deep has been sunk, still carrying the lode, which increases from 5ft. to 6ft. in width. The ore is the grey or vitreous copper, red oxide, and green and blue carbonates. What has been recently raised looks equal to 40 per cent., and a great portion of it to over 50 per cent. As these mines are situated near the place of shipment the profits will, of course, be correspondingly higher.

Recently much attention has been given to the silver deposit, and large areas have been taken up under licences at the Mary, Grove Hill, and the Union. About thirty miles to the east of the Union is the Eveleen Silver Mine. Here expensive smelting machinery has been erected, and large quantities of silver moulded, while thousands of tons of ore are at surface waiting to be dealt with. This mine is believed to be one of the richest in Australia, and will doubtless, if properly managed, yield splendid returns to the company.

Very little is yet known of the vast mineral resources of the Northern Territory. The Rev. Tenison Woods says it is exceptionally rich in minerals, only a small portion of which has been made known to the public. He believes the same quantity of mineral, veins of gold, silver, tin, copper, and lead will not be found in an equal area in Australia, and doubts if many provinces will be found in any country so favored as Arnheim's Land, in respect to mineral riches.

Pastoral.

The pastoral interests of the Territory have now assumed large proportions. Pastoral blocks of land, not exceeding 400 square miles, can be leased for twenty-five years at a rental of 6d. per square mile for the first seven years, and 2s. 6d. per square mile for the remainder of the term. Pastoral lands must be stocked within three years of the date of application for lease at the rate of at least two head of great cattle or ten head of small cattle for every square mile. More than one-half of the whole area of the

Territory is now held by pastoralists, and 183,883 square miles have been declared stocked to the extent required by the terms of the lease. The reports of the condition and increase of stock from all directions are highly satisfactory. Every year the country improves, and, when the natural rank grasses are fed down, its value will be greatly increased. The Austral Downs and Herbert river districts are well suited for sheep. It is estimated the flocks already number 60,000. Writing of the Avon Downs clip, Mr. Little reports that the wool from Mr. Guthrie's station was of so good a quality that it brought 16d. per pound in a very low market. Mr. Little, who is thoroughly acquainted with the country, estimates that the tableland to the south of the McArthur, when improved, will carry from 4,000,000 to 5,000,000 of sheep.

The Government Resident, says:—"Pastoral occupation, on large areas, principally for cattle-raising purposes, is also attended with considerable success. Mr. C. B. Fisher and other pastoralists who have stocked country have, after overcoming initial difficulties, met with encouraging results. Station-owners in the Territory are beginning to get over the difficulties of acclimatizing stock brought from Queensland, and are stocking freely, while the strip of country from McArthur river to the head waters of the Victoria river has been declared stocked. The sheep are doing well on the Herbert river blocks and elsewhere. The pastoral industry has reached such a stage that the pressing necessity for finding a market for the surplus stock is obvious to all interested in pastoral pursuits, and it is to be hoped that in addition to obtaining access to the markets of the East for the live stock, that the proposal to establish meat-freezing works on the Adelaide river will be successful."

No doubt the central and southern part of the Territory will become an extensive horse-breeding district, and that a ready market will be found in India for well-bred animals, suitable for remounts and general use.

Rivers, and Agricultural Land.

A large and valuable amount of information as to the extent of the rivers and the character of the land on their banks has been obtained by Captain Carrington, commander of the Government steamship *Palmerston*. In April, 1884, he steamed up the

McArthur twelve miles, the *Palmerston* drawing 11ft. 3in. Beyond that the river has to be navigated by vessels of less draught. The newly surveyed township of Borrooloola is situated thirty-seven miles from the mouth of the river. There is good agricultural country in the neighborhood.

Later on in that year the *Palmerston* explored the Victoria river. Captain Carrington reports it navigable for vessels of the largest class for fifty miles from the sea. This river is the natural outlet for about ninety thousand square miles of splendid pastoral country.

The Daly, the entrance to which is two miles wide, was next examined. The rise of tides at springs varies from 18ft. to 21ft. The river can be entered by vessels drawing 18ft. at high water ordinary springs. For some distance from the mouth the land is admirably adapted for cultivation. The banks are a series of jungles and grassy plains. The soil is good, easily worked, and well fitted for the growth of sugarcane. Liberian coffee and indigo would also grow well. A grant of 10,000 acres, about fifty miles from the entrance to the river, has been made to a company subject to the condition of the plantation clauses of the Northern Territory Lands Act. These conditions are that the cultivation of the land must be commenced within three years; that there shall be planted with sugarcane or other products suitable to the climate not less than 200 acres; that the sum of £5,000 shall be spent in cultivation and the erection of machinery, and that not less than 250 tons of merchantable sugar, or other agricultural or horticultural products of equal value be obtained from the land. Upon these conditions being complied with the company will obtain the fee-simple of the 10,000 acres.

After examining the Roper, Goyder, Blyth, Liverpool, and King rivers, Captain Carrington explored the Alligator rivers. The South Alligator was ascended for sixty miles, and the *Palmerston* taken up thirty miles. On each side of the river the jungle is a dense mass of luxuriant tropical vegetation, consisting of large trees with a dense undergrowth. The East Alligator was traced for a distance of fifty miles, and the steamer taken up fifteen miles. The river is navigable for small crafts drawing eight or ten feet forty miles. The plains that border this river, with the jungle lands beyond, differ in no particular from those of the South river. The West Alligator was traced a distance of twenty-two miles; it is fringed with dense mangroves throughout. The South and East

Alligator rivers were subsequently visited by Mr. Holtze, the Government gardener, who gave his opinion that the lands bordering these rivers are particularly well suited for the cultivation of rice.

The Adelaide, the nearest large river to Palmerston, is a splendid stream, navigable for eighty miles, and so regular and deep that vessels can lie and discharge within a few feet of its sides. The land on its banks is suitable for the cultivation of sugarcane, banana, pine apple, coffee, indiarubber, and indigo. There is a coffee plantation at Beatrice Hills where the plants are growing remarkably well. The first picking will be made this year, and a good exhibit shown at the Jubilee Exhibition.

The Government Resident (Hon. J. L. Parsons) has recently visited China and the East, with a view of collecting information regarding tropical products suitable to the Territory. Hongkong, Canton, Macao, Saigon, Singapore, and Batavia were visited with this object, and he states :—

“The result of careful observations at the places I have mentioned is, that I am confident that rice, Liberian coffee, sugar, millet, ginger, tapioca, and a great variety of other tropical products may be cultivated with the utmost success in the Territory. At present, owing to the difficulty of obtaining suitable labor and other causes, very little progress has been made in the cultivation of tropical products ; but if any arrangements can be made for the introduction of coolie or other cheap labor, there is no reason, so far as I can see, why the agricultural interest should not be developed with the most beneficial results to all the southern colonies. The principal sugar plantation, which is being worked by South Australian capital, is not accomplishing such good results as were looked for ; but this is owing to the unsuitability of the land selected. The crop of sugar, however, which we saw at the new Government garden at Palmerston, is finer than any we saw elsewhere during our trip. There are thousands of square miles of good sugar-growing land obtainable on the banks of the various rivers.”

The land laws of the Territory are liberal in the extreme. Twelve hundred and eighty acres can be selected on credit at a rental of sixpence per acre, with a right of purchase at twelve and sixpence per acre, and any lessee who *bona fide* cultivates 640 acres with tropical products during the first five years of his lease is relieved from further payment of either rent or purchase-money.

and is entitled to a grant of the 1,280 acres in fee-simple. Any area in excess can be purchased at auction at the upset price of twelve shillings and sixpence per acre. There are now open for selection or sale for cash 240,000 acres.

Railways.

The Palmerston and Pine Creek railway, which is now in course of construction, is 145 miles in length. It is on the 3ft. 6in. gauge—the same gauge as the northern lines of South Australia and the colonies of Queensland and Western Australia. The sleepers throughout are of steel. It will traverse the centre of the known metalliferous country. It will reduce the cost of working gold and other mineral claims by at least fifty per cent., and will give cheap and certain carriage for passengers and goods between Port Darwin and the mines at all seasons of the year. It will also lessen in the same proportion for the 145 miles of railway the cost of station supplies, and materially contribute to the pastoral occupation of the Crown lands.

A Royal Commission is now sitting to collect evidence and make a recommendation as to the best means of completing the Trans-Australian railway; and it is confidently expected that before the completion of the line to Pine creek, another section at least will be undertaken. The contract for the construction of the Palmerston and Pine creek railway was taken by Messrs. C. & E. Millar, for £605,424, the class of labor being at the option of the contractors. Port Darwin, which will be the terminus of the Trans-Australian railway, has the largest and safest harbor on the north coast of Australia. During the past eighteen months H.M.S. *Myrmidon* and *Flying Fish* have made a careful survey of the harbor itself and of the approaches from the east through Clarence and Dundas Straits. As the terminus of the overland telegraph line and of the two cables from Java, Port Darwin is a place of great importance. The attention of the Imperial Government has been called to the natural facilities which it offers for an Imperial station for coals and munitions of war. In addition to the necessity of protecting telegraphic communication, the steamers in the Australian and China trade make Port Darwin the first place of call, and the last port of departure. In view also of the large trade which must arise out of the Trans-Australian railway, and the strategic position of Port Darwin, it must be the chief port of North Australia.

(A Brief Outline, by J. G. Knight, Commissioner for N.T. Exhibitors.)

NOTE.—The Northern Territory Court is on the Promenade, down the first flight of steps at the back of the main building.

Port Darwin, the principal harbor for shipping in the Northern Territory, is situated in latitude (of Fort Hill) $12^{\circ} 28' 30''$ south, and longitude $130^{\circ} 52''$ east. The harbor is fine and spacious comprising many square miles of water, varying from four to fifteen fathoms. Spring tides from 16ft. to 24ft.

The principal cattle stations already established are those of the North Australian Pastoral Company on the Daly River, Glencoe, and the Victoria River, the latter comprising 35,435 square miles of country; W. J. Browne's Spring Vale Station, on the Katherine, and Delamere Downs, the latter covering 2,848 square miles; Acres & Suttor, north of Roper River, 6,450 square miles; Amos, Amos, & Broad, south of Gulf of Carpentaria, 19,033 square miles; Buchanan, W. F., Wave Hill Station, Sturts Creek, 4,570 square miles; Campbell, Lewis, & Wreford, Coburg Peninsula, 1,250 square miles; Carandoth Pastoral Company, on Queensland boundary, 1,600 square miles; Chewings, Chas., near Alice Springs, 4,145 square miles; Chisholm, J. Wm., & Broad, A., north of Herbert River, 3,162 square miles; Christian, J. B. and W. M., near Anthony Lagoon, Walhallow Downs, 2,510 square miles; Christian, J. B., 1,000 square miles; Costello, John, Roper River, 16,084 square miles; Douglas, Walter, Powell's Creek Run, 16,705 square miles; Fisher, C. B. (North Australian Pastoral Company), Victoria River, 35,435 square miles; Gardiner, C. F., and Co., north of Herbert River, 2,065 square miles; Sides, Hatten, Gibson, & Robertson, Limmen Bight River, 2,336 square miles; Gilbert, Joseph, near Alice Springs, 1,200 square miles; Youl, Gordon, & Willoby, near Charlotte Waters, 8,620 square miles; Grant-Thorold & Stokes, east of Alice Springs, 2,600 square miles; Guthrie, T., Herbert River, 600 square miles; Hay, Adam, on the Field River, 1,600 square miles; Hodgson Downs Pastoral Association, north of Daly Waters, 4,707 square miles; Lamb, Ed. Wm., 780 square miles; Lee, Lionel William, near Tennant's Creek, 1,000 square miles; Tennant, Love, and Love, near Alice Springs, 5,240 square miles; Macartney,

J. A., Arnheim Land, 11,342; Macpherson, E. A.; Maher, McKinnon, Power, Cochrane, & Todd, east of Powell's Creek, 2,400 square miles; McIlwraith, Forrest, & Collins, north and south of Herbert River, 13,042 square miles; Mercantile Bank of Sydney, near Creswell Creek, 3,015 square miles; Melrose, George, south of Alice Springs, 2,563 square miles; Murray, David, Barrow's Creek Run, 12,293 square miles; The Musgrave Range Pastoral Company, south of Victoria River, 6,220 square miles; Panton & Osmand, west boundary of province, 2,100 square miles; Patterson, D. W. H., on the Palmer and the Elsie Station River, 3,416 square miles; Walker & Parke, Henbury, Finke River, 2,195 square miles; Richardson, T. L., near Herbert River, 4,017 square miles; Rocklands Pastoral Company, north of Herbert River, 975 square miles; Macdonald, Smith, & Co., Creswell Creek, 7,281 square miles; Tyson, Jas., jun., near Gulf of Carpentaria, 1,500 square miles; Warburton, R. E., Erldunda, 970 square miles.

Some of these stations are devoted to the breeding of horses.

Sheep thrive on the Herbert River, Austral Downs, and Doon Downs Stations, while the flocks of ration sheep at the various telegraph depôts keep in good condition and increase in satisfactory ratio.

The cultivated lands grow sugar-cane, rice, cotton, yams, sweet potato, maize, tobacco, coffee, cassava, arrowroot, ginger, castor oil plant, millet, sorghum, tacca, pea nut (for oil), teal seed (for oil), manila and sun hemp, and many other like products of commercial value.

Indigo and cotton are spreading over Palmerston like weeds, and seem to thrive on hard rock as well as on good soil.

Tropical fruits, such as the pineapple, banana, plantain, papaw, &c., grow in abundance, and are remarkably cheap. The orange, lemon, pomelo, custard apple, mango, and other fruits peculiar to warm climates are cultivated with success.

Vegetables in great variety are grown by Chinese gardeners wherever there is any settlement, and the Chinese also supply Palmerston with fish daily, from the waters of Port Darwin.

The average rainfall is about sixty-five inches. The wet season extends from October to April and the dry one from May to September. During the north-west monsoon the maximum temperature in the shade is 96° in the day, while the minimum in the night is 65°. With the south-east monsoon the maximum tem-

perature in the day is 89° and the minimum at night is 56° . The above figures refer to temperature near the coast; as we leave the seaboard the climate becomes drier and colder, until in the centre of the continent the thermometer falls below 30° , and the average annual rainfall is about thirteen inches.

The country is rich in minerals, and during the last fourteen years has yielded a large quantity of alluvial gold, the ground, more or less auriferous, extending from Bridge Creek to Houschildt's rush, a distance of about ninety miles.

Gold bearing reefs of considerable extent have been opened at the Stapleton, the Howley, the Britannia, Bridge Creek, Yam Creek, the Fountain Head, the Twelve Mile, the McKinlay, the Union, the Extended Union, the Lady Alice, and Pine Creek, the distance between the first and last named places being about eighty-seven miles.

Gold is also now being found at the southern extreme of the Northern Territory, viz., at "Alchebugana," fifteen miles north of the Peake. It is also known to exist at Alice Springs, in the Todd, at Short's Range near Tennant's Creek, and doubtless whenever systematic prospecting takes place gold and other valuable minerals will be found in many parts of the interior of the country.

Copper is abundant, particularly on the Daly River, which seems to be its home, the percentage of metal being so high that, notwithstanding the present low price, two mines, viz., the Daly River Copper Company and Wheal Danks, are being worked at a good profit, and steps are being taken to erect smelting works on the ground.

Good deposits of copper have also been found at the Howley, within a short distance of the railway now in course of construction.

The Government railway from Palmerston to Pine Creek (145 miles), now being vigorously pushed on by Messrs. Millar Brothers, will prove to be the greatest boon ever conferred upon the Territory by reducing the cost of carriage to and from the mineral districts, and thereby lessening the cost of production and also of living. At present, during the rainy season, wheeled traffic is absolutely suspended, and teamsters have to turn out their horses and bullocks for more than a third of the year.

The section of the railway now in hand must be regarded as part of the transcontinental line destined to be extended south-

ward, just as that to the Peake must be extended northward, till the two extremes meet to form a union between Adelaide and Port Darwin. This being achieved South Australia will command two great outlets for commerce, one at the north and the other at the south ends of our vast Australian continent, and will then possess advantages for trade far beyond those of any of the other colonies of Australasia.

SOUTH AUSTRALIAN EXHIBITS.

MAIN BUILDING (East and West of Main Entrance).

[Numbers commence at Western extremity.]

Note.—The numbers placed opposite the names in catalogue indicate the numbers marked on exhibits.

- 1 Bible Stand—Bibles and Testaments in different languages.
- 2 G. C. Hawker, The Briars, Medindie—Cases containing seaweed. (West gallery.)
- 3 Harper & Co., Fulteney-street, Adelaide—Tea, coffee, condiments, &c.
- 4 Cawthorne & Co., Y.M.C.A. Buildings, Gawler-place—Hand-painted plaques, Poonah painted.
- 5 Government Printer—
Case of letterpress and stationery binding.
Stand, with two books, containing specimens of letterpress and lithographic printing (for inspection throughout).
Pamphlets on stands on case, of which visitors are invited to take one.
- 6 Royal Commissioners for South Australia—Case of furs and skins of native animals, &c.
- 7 W. R. Cave & Co., Lipson-street, Port Adelaide—Ostrich feathers and eggs from birds bred and reared in the colony.
- 8 Dr. Schomburgk, Botanic Gardens—Herbarium. (West gallery.)
- 8a F. N. Burchell, Water Conservation Office, Government Offices—
Designs, plans, and description of canalization adapted to the River Murray, showing proposed improvements to surrounding country, &c., &c.
- 9 W. Kennedy, Noarlunga—Carving on slate.
- 10 " " Carving on Oamaru stone.
- 11 Hammer & Co., Rundle-street, Adelaide—Photographs.
- 12 Miss E. B. Aird, Henley Beach—Velvet mantel drape, inlaid with water-color painting on porcelain.
- 13 W. H. Heddle, West Hilton, c/o Hansen, Evans, & Co.—Two carved
- 14 } marble picture frames.
- 15 Various Decorations on Wall, descriptive of Australian flora, executed by the Misses L. Field, L. Robinson, Sophie Bagot, and Mr. Robinson.
- 16 Miss E. F. Broad, West-street, Unley—Hand-painted mirror (bird and waterlilies).
- 17 Miss Humberstone, Mount Bat, Yorke's Peninsula—Case of conework.
- 18 Geo. Watson, Mount Gambier—Photographs.
- 19 J. E. Brown, J.P., F.L.S., Conservator of Forests—Collection of lithographs, illustrating the Forest Flora of South Australia; indigenous timbers, timbers of exotic trees grown in the colony; herbarium specimens; seeds and seed vessels.
Lithograph, showing leaves, flowers, seed-vessels, and bark of—
 - 1 Eucalyptus odorata, peppermint gum
 - 2 " paniculata, panicle-flowered gum
 - 3 Acacia decurrens, black wattle
 - 4 Eucalyptus corynocalyx, sugar gum
 - 5 Acacia pycnantha, broad-leaved wattle
 - 6 Eucalyptus leucoxylon, blue gum
 - 7 "Forest Flora" title page

Conservator of Forests—continued.

Lithograph, showing leaves, flowers, seed vessels, and bark of—

- 8 *Banksia ornata*, scrub honeysuckle
- 9 *Eucalyptus cosmophylla*, scrub gum
- 10 *Eucalyptus leucoxylon* (var. *macrocarpa*), red-flowering blue gum
- 11 *Casuarina distyla*, scrub sheoak
- 12 " " (female flower), scrub sheoak
- 13 *Eucalyptus viminalis*, manna gum
- 14 *Dodonaea microzyga*, small-leaved native hop
- 15 *Acacia longifolia*, long-leaved wattle
- 16 *Bursaria spinosa*, native box
- 17 *Eucalyptus paniculata*, panicle-flowered gum
- 18 *Acacia Spilleriana*, long flower-stalked wattle
- 19 *Eucalyptus odorata*, peppermint gum
- 20 *Eremophila oppositifolia*, opposite-leaved eremophila
- 21 " *alternifolia*, alternate-leaved eremophila
- 22 *Eucalyptus hemiphloia*, box gum
- 23 " *pauciflora*, south-eastern white gum
- 24 " *viminalis*, manna gum

Slab of wood of—

- 25 *Eucalyptus leucoxylon*, blue gum
- 26 " *rostrata*, red gum
- 27 *Acacia decurrens*, black wattle
- 28 *Casuarina quadrivalvis*, sheoak
- 29 *Eucalyptus obliqua*, stringybark
- 30 *Acacia homalophylla*, myall
- 31 *Banksia marginata*, honeysuckle
- 32 *Eucalyptus corynocalyx*, sugar gum
- 33 *Acacia salicina*, Broughton willow
- 34 *Eucalyptus capitellata*, stringybark
- 35 *Erythrophlaeum Laboucherii*, ironwood (from N.T.)
- 36 *Acacia melanoxylon*, blackwood
- 37 *Melaleuca leucadendron*, milkwood
- 38 *Albizzia procera*, tee-coma
- 39 Hard white wood (from N.T.)
- 40 " " (side of case)
- 41 *Eucalyptus odorata*, peppermint gum
- 42 " *viminalis*, manna gum
- 43 *Melaleuca leucadendron* (stained), milkwood
- 44 *Casuarina glauca*, black oak
- 45 *Melaleuca squarrosa*, bottlebrush teatree
- 46 *Eucalyptus Stuartiana*, Stuart's gum
- 47 *Livistona australis*, the cabbage palm
- 48 *Acacia homalophylla*, myall
- 49 *Pinus halepensis*, Aleppo pine
- 50 " "
- 51 *Eucalyptus obliqua*, stringybark
- 52 *Acacia aneura*, mulga
- 53 " *pycnantha*, broad-leaved wattle
- 54 *Bursaria spinosa*, native box
- 55 *Banksia marginata*, honeysuckle
- 56 *Eucalyptus odorata*, peppermint gum
- 57 *Exocarpus cupressiformis*, native cherry
- 58 *Pittosporum phylliracoides*, poison-berry tree
- 59 *Robinia pseud-acacia*, white acacia
- 60 *Eucalyptus hemiphloia*, box gum
- 61 *Eremophila longifolia*, long-leaved eremophila
- 62 White cedar (from N.T.)

Conservator of Forests—continued.**Slab of wood of—**

- 63 *Eucalyptus gonicalyx*, bastard box gum
- 64 *Callitris robusta*, native pine
- 65 Hard white wood from N.T. (side of case)

Herbarium specimens of—

- 66 *Casuarina quadrivalvis*, sheoak
- 67 *Eucalyptus amygdalina*, messmate gum.
- 68 *Melaleuca parviflora*, teatree
- 69 *Eucalyptus oleosa*, mallee
- 70 *Myoporum insulare*, blueberry tree
- 71 *Eucalyptus incrassata*, wakery gum
- 72 *Acacia aneura*, mulga
- 73 *Eucalyptus viminalis*, manna gum
- 74 *Callistemon coccineus*, bottle-brush
- 75 *Pittosporum phillyraeoides*, poison-berry tree
- 76 *Eucalyptus odorata*, peppermint gum
- 77 *Melaleuca squarrosa*, bottle-brush teatree
- 78 *Acacia decurrens*, black wattle
- 79 *Eucalyptus Gunnii*, white swamp gum
- 80 “ *corynocalyx*, sugar gum
- 81 “ *capitellata*, stringybark
- 82 “ *hemiphloia*, box gum
- 83 *Acacia salicina*, Broughton willow
- 84 *Casuarina glauca*, black oak
- 85 *Acacia pycnantha*, broad-leaf wattle
- 86 *Eremophila longifolia*, long-leaved eremophila
- 87 *Banksia ornata*, scrub honeysuckle
- 88 *Eucalyptus pyriformis*, large-fruited mallee
- 89 *Exocarpus cupressiformis*, native cherry
- 90 *Eucalyptus leucoxydon*, S.A. blue gum
- 91 “ *cosmophylla*, scrub gum
- 92 “ *pauciflora*, white gum
- 93 *Eremophila oppositifolia*, opposite-leaved eremophila
- 94 *Dodonaea microzyga*, small-leaved native hop
- 95 *Casuarina distyla*, scrub sheoak
- 96 *Eucalyptus gracilis*, red mallee
- 97 *Santalum acuminatum*, sandalwood
- 98 *Eucalyptus obliqua*, common stringybark
- 99 *Callitris robusta*, native pine
- 100 *Acacia melanoxylon*, blackwood
- 101 *Acacia retinodes*, silver wattle
- 102 *Bursaria spinosa*, native box
- 103 *Eucalyptus rostrata*, red gum
- 104 *Banksia marginata*, honeysuckle
- 105 *Santalum lanceolatum*, sandalwood

Veneer of—

- 106 *Casuarina quadrivalvis*, common sheoak
- 107 *Eucalyptus corynocalyx*, sugar gum
- 108 *Callitris robusta*, native pine
- 109 *Eucalyptus obliqua*, stringybark
- 110 Ironwood (from N.T.)
- 111 White cedar (from N.T.)
- 112 “ “
- 113 Ironwood (from N.T.)
- 114 *Eucalyptus obliqua*, stringybark
- 115 *Callitris robusta*, native pine
- 116 *Banksia marginata*, honeysuckle

Conservator of Forests—continued.

Veneer of—

- 117 White cedar (from N.T.)
- 118 “ “
- 119 *Banksia marginata*, honeysuckle
- 120 *Eucalyptus obliqua*, stringybark
- 121 “ *rostrata*, red gum
- 122 *Eucalyptus obliqua*, stringybark
- 123 *Casuarina quadrivalvis*, sheaoak
- 124 “ “
- 125 *Eucalyptus corynocalyx*, sugar gum
- 126 “ *obliqua*, stringybark
- 127 “ *rostrata*, red gum
- 128 “ *obliqua*, stringybark
- 129 *Acacia melanoxylon*, blackwood
- 130 “ “
- 131 *Eucalyptus obliqua*, stringybark
- 132 Ironbark (from N.T.)
- 133 *Banksia marginata*, honeysuckle
- 134 *Eucalyptus corynocalyx*, sugar gum
- 135 *Acacia melanoxylon*, blackwood
- 136 “ “
- 137 *Eucalyptus corynocalyx*, sugar gum
- 138 *Banksia marginata*, honeysuckle
- 139 Ironwood (from N.T.)
- 140 *Eucalyptus obliqua*, stringybark
- 141 *Casuarina quadrivalvis*, sheaoak
- Lithograph showing leaves, flowers, seed-vessels, and bark of—
- 142 *Casuarina quadrivalvis*, sheaoak
- 143 *Eucalyptus leucoxylon*, blue gum
- 144 “ “ (var. *macrocarpa*), white-flowering blue gum
- 145 “ “ blue gum
- 146 *Acacia melanoxylon*, blackwood
- 147 *Acacia Spilleriana*, long flower-spiked acacia
- 148 *Eucalyptus gracilis*, mallee
- 149 “ *viminalis*, manna gum
- 150 “ *gracilis*, mallee
- 151 *Exocarpus aphylla*, native cherry
- 152 *Pittosporum phylliraeoides*, poison-berry tree
- 153 *Eucalyptus Gunnii*, white swamp gum
- 154 “ *pauciflora*, white gum
- 155 *Hakea multineata*, crimson-spiked hakea
- 156 *Eucalyptus paniculata*, panicle-flowered gum
- 157 “ *odorata*, peppermint gum
- 158 *Bursaria spinosa*, native box
- 159 *Eucalyptus gracilis*, white mallee
- 160 *Eremophila longifolia*, long-leaved eremophila
- 161 *Acacia Spilleriana*, long flower-spiked acacia
- 162 *Eremophila alternifolia*, alternate-leaved eremophila
- 163 *Melaleuca squarrosa*, bottlebrush teatree
- 164 *Eucalyptus cosmophylla*, scrub gum
- 165 *Dodonaea microzyga*, native hop
- 166 *Acacia longifolia*, long-leaved acacia
- 167 *Dodonaea lobulata*, native hop
- 168 *Bursaria spinosa*, native box
- 169 *Eucalyptus hemiphloia*, box gum
- 170 “ *pyriformis*, red-flowering mallee
- 171 “ *odorata*, peppermint gum

Conservator of Forests—continued.

Lithograph showing leaves, flowers, seed-vessels, and bark of—

- 172 *Eucalyptus paniculata*, panicle-flowered gum
- 173 *Myoporum insulare*, blue-berry tree
- 174 *Dodonaea microzyga*, native hop
- 175 *Callistemon coccineus*, bottlebrush
- 176 *Acacia decurrens*, black wattle
- 177 *Melaleuca squarrosa*, bottlebrush teatree
- 178 *Eucalyptus hemiphloia*, box gum
- 179 *Acacia decurrens*, black wattle
- 180 *Eremophila longifolia*, long-leaved eremophila
- 181 *Banksia marginata*, honeysuckle
- 182 *Acacia longifolia*, long-leaved acacia
- 183 *Hakea multilineata*, crimson-spiked hakea
- 184 *Myoporum insulare*, blue-berry tree
- 185 *Eremophila oppositifolia*, opposite-leaved eremophila

Slabs of—

- 186 *Acer pseudo-platanus*, sycamore
- 187 " "
- 188 *Crataegus nigra*, black hawthorn
- 189 " "
- 190 Apple, No. 1
- 191 Apple, No. 2
- 192 *Ceratonia siliqua*, carob tree
- 193 " "
- 194 *Fraxinus excelsior*, English ash
- 195 " "
- 196 *Laurus camphora*, camphire tree
- 197 " "
- 198 *Ulmus campestris*, English elm
- 199 " "
- 200 *Salix viminalis*, osier
- 201 " "
- 202 *Quercus pedunculata*, English oak
- 203 " "
- 204 *Quercus Robur*, English oak
- 205 " "
- 206 *Juglans regia*, walnut
- 207 " "
- 208 English oak
- 209 *Maclura aurantiaca*, osage orange
- 210 English oak
- 211 " "
- 212 *Larix Europaea*, English larch
- 213 " "
- 214 *Acacia salicina*, Broughton willow
- 215 *Acacia melanoxylon*, blackwood
- 216 Ironbark (from N.T.)
- 217 *Bursaria spinosa*, native box
- 218 *Acacia salicina*, Broughton willow
- 219 " retinodes, silver wattle
- 220 " aneura, mulga
- 221 *Eucalyptus hemiphloia*, box gum
- 222 *Acacia pycnantha*, broad-leaved wattle
- 223 *Eucalyptus Stuartiana*, Stuart's gum
- 224 *Pinus pinea*, stone pine
- 225 *Banksia marginata*, honeysuckle
- 226 *Eucalyptus obliqua*, stringybark

Conservator of Forests—continued.**Seeds of—**

- 227 *Eucalyptus corynocalyx*, sugar gum
- 228 " *capitellata*, stringybark
- 229 *Robinia pseud-acacia*, white acacia
- 230 *Pittosporum phylliraeoides*, poison-berry tree
- 231 *Eucalyptus rostrata*, red gum
- 232 *Grevillea robusta*, silky oak
- 233 *Acacia melanoxylon*, blackwood
- 234 White cedar (from N.T.)
- 235 Tee-coma (from N.T.)
- 236 *Eucalyptus incrassata*, mallee
- 237 " *viminalis*, manna gum
- 238 *Acacia homalophylla*, myall

Gum of—

- 239 *Xanthorrhoea Tatei* (gum), Kangaroo Island grass tree
- 240 " (fl. spike), Kangaroo Island grass tree

Slab of—

- 241 *Eucalyptus corynocalyx*, sugar gum

Bark of—

- 242 *Acacia pycnantha*, broad-leaved wattle

Slab of—

- 243 *Eucalyptus rostrata*, redgum

Railway sleeper of—

- 244 *Eucalyptus hemiphloia*, box gum

Transverse section of—

- 245 *Eucalyptus rostrata*, red gum
- 246 " " " "
- 247 " *odorata*, peppermint gum
- 248 " *corynocalyx*, sugar gum

Railway sleepers of—

- 249 *Eucalyptus corynocalyx*, sugar gum
- 250 " *rostrata*, red gum

Seed vessels of—

- 251 *Eucalyptus globulus*, Tasmanian blue gum
- 252 " *cornuta*, yate gum
- 253 *Biota orientalis*, Chinese arbor vitae
- 254 *Pinus tuberculata*, tuberculated-coned pine
- 255 " *contorta*, contorted or twisted-branch pine
- 256 *Melaleuca hypericifolia*
- 257 *Guilandina Bonducella*
- 258 *Rhus rodanthma*
- 259 *Hakea leucoptera*
- 260 *Cassia Brewsterii*
- 261 *Cupressus torulosa*
- 262 *Lagunaria Pattersonii*
- 263 *Elaeodendrum australe*
- 264 *Clerodendron tomentosum*
- 265 *Eucalyptus Lehmanni*
- 266 *Pinus Sabiniana*, Sabine's pine
- 267 *Tristania conferta*
- 268 *Sterculia*
- 269 *Eucalyptus calophylla*, W. Australian red gum
- 270 *Pinus muricata*, Bishop's pine
- 271 *Sequoia sempervirens*, Californian red wood
- 272 *Callistemon speciosus*, red bottlebrush
- 273 *Grevillea heliosperma*
- 274 *Casuarina humilis*

Conservator of Forests—continued.

Seed vessels of—

- 275 *Acacia cyanophylla*
- 276 *Cupressus sempervirens*, common erect cyprus
- 277 *Pinus halepensis*, Aleppo pine
- 278 *Pinus grandis*
- 279 *Quercus pedunculata*, common British oak
- 280 *Eucalyptus passiflora*, white gum
- 281 *Pittosporum phyllaroides*, poison-berry tree
- 282 *Hakea multineata*, crimson-spiked hakea
- 283 *Eucalyptus hemiphloia*, box gum
- 284 *Dodonaea microzyga*, small-leaved native hop
- 285 *Pinus insignis*, remarkable pine
- 286 *Cedrus deodara*, Indian cedar
- 287 *Pinus pinea*, stone pine
- 288 *Eucalyptus incrassata*, mallee
- 289 *Acacia Spilleriana*, long flower-stalked acacia
- 290 *Callitris rhomboidea*, native pine
- 291 *Dodonaea lobulata*, lobe-leaved native hop
- 292 *Casuarina quadrivalvis*, shea oak
- 293 *Acacia decurrens*, black wattle
- 294 *Eucalyptus pyriformis*, large-fruited mallee
- 295 " *corynocalyx*, sugar gum
- 296 " *gracilis*, white mallee
- 297 *Casuarina glauca*, black oak
- 298 *Juglans regia*, common walnut
- 299 *Eucalyptus leucoxylon*, blue gum
- 300 " *odorata*, peppermint gum
- 301 *Quercus Robur*, sessile-fruited British oak
- 302 *Bursaria spinosa*, native box
- 303 *Callistemon coccineus*, bottlebrush
- 304 *Casuarina distyla*, scrub shea oak
- 305 *Acacia melanoxylon*, blackwood
- 306 *Santalum lanceolatum*, native sandalwood
- 307 *Araucaria excelsa*, Norfolk Island pine

Seeds of—

- 308 *Acer Negundo*, Canadian maple
- 309 *Sterculia*, heterophylla, flame tree
- 310 *Platanus acerifolia*, maple-leaved plane
- 311 *Betula alba*, white birch
- 312 *Acer opalus*
- 313 *Acacia sentis*
- 314 *Eugenia Smithii*
- 315 *Sterculia acerifolia*
- 316 *Tilia americana*
- 317 *Grevillea robusta*
- 318 *Eucalyptus paniculata*, panicle-flowered gum
- 319 " *leucoxylon*
- 320 *Araucaria excelsa*, Norfolk Island pine
- 321 *Hakea multineata*, crimson-spiked hakea
- 322 *Acacia melanoxylon*, blackwood
- 323 *Exocarpus cupressiformis*, native cherry
- 324 *Pinus pinea*, stone pine
- 325 *Achras sapota*, common sapota
- 326 *Acer pseudo-platanus*, sycamore
- 327 *Fraxinus excelsior*, English ash
- 328 *Catalpa speciosa*
- 329 *Cedrus deodora*, Indian cedar

Conservator of Forests—continued.**Seeds of—**

- 330 *Eucalyptus rostrata*, red gum
- 331 *Ceratonia siliqua*, carob tree
- 332 *Melaleuca squarrosa*, bottlebrush teatree
- 333 *Casuarina quadrivalvis*, sheoak
- 334 *Pinus insignis*, remarkable pine
- 335 *Eucalyptus passiflora*, white gum
- 336 *Acacia homalophylla*, myall
- 337 *Pinus halepensis*, Aleppo pine
- 338 *Acacia pycnantha*, broad-leaf wattle
- 339 *Callistemon coccineus*, bottlebrush
- 340 *Eucalyptus corynocalyx*, sugar gum
- 341 “ var. *macrocarpa*, large-fruited blue gum
- 342 *Sequoia gigantea*, Wellingtonia
- 343 *Betula excelsa*, birch
- 344 *Abies Douglasii*, Douglas fir
- 345 *Eucalyptus odorata*, peppermint gum
- 346 *Banksia ornata*, scrub honeysuckle
- 347 *Melia Azedarach*, white cedar
- 348 *Casuarina glauca*, black oak
- 349 *Myoporum insulare*, blue-berry tree
- 350 *Eucalyptus capitellata*, head-flowered stringybark
- 351 *Eremophila longifolia*, long-leaved eremophila
- 352 *Robinia pseud-acacia*, white acacia
- 353 “ “ apricot
- 354 *Maclura aurantiaca*, osage orange
- 355 *Acacia decurrens*, black wattle
- 356 *Eucalyptus obliqua*, stringybark
- 357 “ *Gunnii*, white swamp gum

NOTE.—All the exotic timbers represented were obtained from Highercombe, the property of Sir R. D. Ross.

- 20 **Robt. Walsh, Woodville**—Exhibit of carving with penknife, consisting of fans, screens, &c.
- 21 **Mrs. W. Marks, Thebarton**—Case of wax flowers and fruits.
- 22 **Mayfield & Sons, Rundle-street, Adelaide**—Suite of bedroom and dining-room furniture.
- 23 **F. Simpson, O'Connell-street, N.A.**—Suite of drawing-room furniture.
- 24 **T. S. Reed, Chairman Destitute Board**—Bamboo garden table and wall bracket.
- 25 **C. Matte, Stepney-street, Stepney**—Inlaid table.
- 26 **P. Wilhelm, Eastwood**—Specimens of turnery.
- 27 **W. P. Evans, York Hotel, Adelaide**—Fretwork pierglass and dressing-table, hand made.
- 28 **Thos. Kerr, Company-street, Kew**—Walking sticks, hand made. Each stick represents 150 to 412 different Australian woods.
- 29 **Royal Commission**—Stand containing walking sticks, made from myall wood.
- 30 **P. Wilhelm, Eastwood**—Turned cup on stand, ornamented with ivory.
- 31 **G. F. & S. Best, O'Connell-street, N.A.**—Specimens of riveted glass and china, umbrellas, appropriately styled “Patients from the China and Glass Infirmary.”
- 32 **J. H. Robertson, Chowilla**—Three violins, made by an amateur.
- 33 **H. Huwald, Pirie-street**—Walnut card table.

34 OLD COLONISTS' COURT.

*HIRAM MILDRED, Honorary Secretary.***Hammer & Co., Adelaide, Exhibitors—**

- 1 Group of Old Colonists; about 700.

H. T. Morris, Esq., J.P., Kapunda, Exhibitor—

- 2 Early settlement of Port Lincoln—Oil painting.
- 3 Portrait, Geo. Milner Stephen, first Acting Governor.
- 4 Photo. of Governor Sir John Hindmarsh.
- 5 Portrait of John Hill, boatswain of the *Buffalo*.
- 6 “ Captain Thos. Lipson, R.N., 1st Harbormaster, 1836.
- 7 Portrait in oils, Sir John and Lady Hindmarsh.

H. J. Moseley, Exhibitor—

- 8 Group of Pioneers, 1836.

Kapunda Institute, Exhibitor—

- 9 Portrait of Frederick H. Dutton.

Sir Henry Ayers, K.C.M.G., Exhibitor—

- 10 Eight views of the Burra and Mine.
- 11 Sample bags, Nobs and Snobs.
- 12 Seven medals in re Burra Mine and Exposition, London and Paris.
- 13 Cards, notes, orders.
- 14 *South Australian News*, 1841.

G. Gerard Shaw, Exhibitor—*Portraits—*

- 15 Rev. J. Gardner.
- 16 Sir J. H. Fisher.
- 17 John Lazar.
- 18 Bentham Neales.
- 19 Robert Sanders.
- 20 Capt. Wm. Allen.
- 21 Dr. Chas. Everard, pioneer, 1836.
- 22 F. S. Dutton.
- 23 John Monk.
- 24 Mr. and Mrs. J. W. Bull.
- 25 Thos. Bastard.
- 26 Capt. Lipson, R.N.
- 27 Sir R. R. Torrens.
- 28 Capt. Dashwood, R.N.
- 29 Capt. Douglas.
- 30 Mr. J. W. Lewis.
- 31 F. J. Sanderson.
- 32 Samuel Chapman.
- 33 M. B. Garlick.
- 34 Mrs. Barnes.
- 35 Alexander Watherstone.
- 36 Mr. and Mrs. J. Chambers.
- 37 Dr. Cotter.
- 38 John Brown.
- 39 Sir G. S. Kingston.
- 40 John Rapid Hoare.
- 41 Mrs. Morgan, *née* Fanny Finnis.

Sketches—

- 42 Railway Hotel, Port Adelaide.
- 43 Moonta Mines.
- 44 Matta Matta Mines.

Old Colonists' Court—continued.

Sketches—

- 45 Kurilla Mines.
- 46 Duryea Mine.
- 47 Port Adelaide in 1845.
- 48 Part of Adelaide in 1845, from north-west.
- 49 St. John's Church.
- 50 S.A. Co's. Mill, Torrens River.
- 51 Hindley-street, 1845, looking east.
- 52 Klemzig Village.
- 53 Government Offices, 1845.
- 54 Frome Bridge.
- 55 Hindley-street, looking west.
- 56 City Mills.
- 57 Government House and North-terrace.
- 58 Crawford's Brewery, Hindmarsh.
- 59 Old Colonial Celebrities, by Glover.

Relics—

- 60 Col. Light's first encampment.
- 61 First Adelaide steeplechase.

Relics—

- 62 Original Customs book, 1838.
- 63 Correspondence *re* seizure *Ville de Bordeaux*, 1841.
- 64 *Adelaide Examiner*.
- 65 Original ship's register or certificate.
- 66 Original land grant.
- 67 Journal of *Lady Augusta*, up Murray.

J. B. Adamson, Exhibitor—

- 68 Oil painting, Hart's settlement, Port Adelaide.

Hiram Mildred (Pioneer), Exhibitor—*Books, &c.—*

- 69 "Thursday's Review," 1850, by A. H. Davis.
- 70 *Portonian*, 1872, by Moodie.
- 71 *Mercury*, paper, 1850, W. E. Hammond.
- 72 Sixteen old books, almanacs, and directories.
- 73 Scrap book and early records of New Holland from 1787.
- 74 "Land of Promise," 1838, by "One Who is Going."
- 75 "Voyages and Adventures," in South Australia during 1836-7-8," by W. H. Leigh.
- 76 "Colonial Sketches; or, Five Years in South Australia," by Robert Harrison, 1862.
- 77 Government map of sections to 1850.
- 78 Late Capt. Charles Sturt's sketches (46) on his exploratory trip down the Murray and back in 1829-30; also, in same book, notes of travel—Laidless Ponds, &c.
- 79 *South Australian*, newspaper, 1841—Account of opening of new Port, list of colonists invited, &c.
- 80 *Adelaide Guardian*, October 12, 1839, printed in black margin—Colonel Light's funeral and procession.

Relics—

- 81 Bush knife, pipe, sail-hook, and rubber of the late Thomas Warriner, Babbage's exploring party.
- 82 Tooth of first kangaroo caught by Wm. Cooper and native women, Sall and Doughboy (interpreters to Col. Light), at Rapid Bay, Sept., 1836.

Old Colonists' Court—continued.

Relics—

- 83 Piece of tree under which Burke and Wills died.
- 84 Nardoo seeds, upon which they subsisted.
- 85 Notice to attend Col. Light's funeral, October, 1839.

Painting—

- 86 Encounter Bay, 1837, wrecks of *Solway*, *South Australian*, and *John Pirie*, near the whale fishing station, painted by the late Henry Mildred, M.L.C.

Portraits, Photos—

- 87 Group of pioneers, 1836, consisting of late Admiral W. J. S. Pullen, Wm. Jacob, his late son Charles Jacob, late Alfred Barker, late George Mildred, B.N., late Rev. T. Q. Stow, late Henry James Smith, late Henry Mildred, late Henry Hay, late W. Peacock, W. C. Crane, C. R. Goode and wife, late Bishop Short, George Davies, O. Smith and wife, Hiram Mildred, and others.

Relics—

- 88 Five colonial tokens (and two medals) used in early days of South Australia.

Photo. Portraits—

- 89 Cabinet photo. of His Worship the Mayor, E. T. Smith.
- 90 Robert Gouger, first Colonial Secretary.
- 91 Osmond Gilles, first Colonial Treasurer.
- 92 Sir George Kingston, Surveyor-General.
- 93 Sir James Hurtle Fisher, John Chambers and wife.
- 94 Nathaniel Hailes ("Timothy Short").

Relics—

- 95 Rush basket, made by native women.
- 96 Two emu eggs.
- 97 Girdle worn by Northern Territory natives.
- 98 Silver model, old gumtree, property of Old Colonists' Association.
- 99 Fossil shell, from the Stony Desert.
- 100 Two fossil stones, from Central Australia.

Sketches—

- 101 Sketch, late Robert Gouger's tent, Glenelg, site of Proclamation.
- 102 Adelaide, looking east, from Hindley-street west.
- 103 Congregational chapel, near Kensington.

Relics—

- 104 First corporation seal (impression) of Adelaide.
- 105 Programme on silk—First races, 1838 (lent by Miss Marian Fisher).
- 106 Coulthard's canteen. This explorer perished at the Elizabeth, north-west of Port Augusta, in 1858, and was close to water at the time. His sufferings are scratched in detail by him on the canteen.

Mrs. Wilson, Exhibitor—

- 107 Portrait of late Stephen King, S.M., one of our early sheep squatters.
- 108 Portrait of late Stephen King, jun., one of J. McD. Stuart's party.
- 109 Adelaide, in 1840. Sketch, primitive buildings.

S. J. Skipper, Exhibitor.—

- 110 Old Government House, by Gill.
- 111 Graham's Castle, in 1849, by Gill.
- 112 Pioneers at work.

Old Colonists' Court—continued.*Sketches—*

- 113 A bygone bridge.
- 114 Old gumtree, 1836.
- 115 Late Robert Thomas's hut, at Glenelg, in 1836.
- 116 Cottage in early days, in 1844.
- 117 Hut, near Brighton, in 1850.
- 118 Ship *Buckinghamshire*.
- 119 Views of early Adelaide.
- 120 Old Port and road to Adelaide.
- 121 Oil painting, South Australian scenery.
- 122 Landing-place, old Port.
- 123 Old Port, in early days.
- 124 Sketches of natives.
- 125 Natives in European garb.
- 126 Glenelg in 1840.
- 127 Adelaide in 1841.
- 128 Portrait of J. M. Skipper, in 1836.
- 129 Four sketches by Colonel Light.
- 130 Port Adelaide and shipping, in 1838.
- 131 Encounter Bay whaling station.
- 132 Yankalilla, in old times.
- 133 Road to Port Adelaide in 1836.
- 134 Benjamin Pain, *Register* runner, his horse and dog; more commonly known in the past as "The Admiral." Copied by S. J. Skipper, from the original in Mr. Bunday's possession.

G. W. Cole, Exhibitor—

- 135 Bust of the late Rev. T. Q. Stow, first Congregational minister of South Australia.

— Flint (of Salisbury), Exhibitor—

- 136 J. McD. Stuart's prismatic compass.
- 137 Photo. copy J. McD. Stuart holding British flag on the shores of the Indian Ocean, Northern Territory.
- 138 S. A. Government Gold Receipt Escort Book.

Relics—

- 139 Old pocket globe, celestial and terrestrial, made in 1783—104 years old. Beautifully made and in excellent preservation, by J. Newton, London.
- 140 Portraits of the late Mr. and Mrs. Barton Hack. These worthy pioneers' names still remain green among a great many colonists. Mr. Hack was our first merchant (Hack, Watson, & Co.), who built the premises in Hindley-street known as McLean, Rigg's warehouses and shops.

Osmond Gilles, nephew of the late Osmond Gilles, first Colonial Treasurer—

- 141 Osmond Gilles' sword, from *Victory*, 101 years old; served under Lord Nelson at the battle of the Nile; also London watchman's rattle.

Caire, Exhibitor—

- 142 Hendrickson (portraits) Mr. and Mrs.
- 143 Native Weapons.

John Stock, of Rosewater, Yatala, Exhibitor—

- 144 Four walking sticks. These are carved out by the exhibitor with simply a pocket knife.

Old Colonists' Court—continued.

*Relics—***Mr. Newman, Exhibitor—**

- 145 D. D. Hergott's diary. Northern explorations, and sketches taken by him on crossing the continent with J. McD. Stuart.

A. T. Hodson's Victorian Illustrations—

- 146 Scrap book, Burke and Wills, and a variety of newspaper engravings, referring to the Burke and Wills departure on exploring trips, Leichardt's, and others.

Mrs. C. A. Wilson, Exhibitor—

- 147 Sketches of Stuart's expedition, by Stephen King, jun. A very interesting collection.
 148 *Portrait of late C. A. Wilson, Prothonotary of the Supreme Court, in crayons, by his daughter, 1838.
 149 Portrait of late Stephen King, of Kingsford.
 150 Adelaide in 1840, by A. J. Bale.
 151 *Mr. Chas. Algernon Wilson, was known as *Amaturæ Naturæ*.

Mrs. R. G. Thomas, Exhibitor—

- 152 Portrait, Mrs. R. Thomas (pioneer), 1836.
 153 Portrait, Mrs. R. G. Thomas (pioneer), 1836.
 154 Col. Light's pocket compass.

Mrs. R. H. Robinson, Exhibitor—

- 155 Portrait, late J. M. Skipper (pioneer).

Mr. Billiatt, Glenelg, Exhibitor—

- 156 Flags of welcome to J. McD. Stuart, on his return from Port Darwin, N.T.
 157 Chip of mangrove upon which Stuart hoisted flag at Northern Territory, 1862.
 158 J. W. Billiatt's pipe, used in 1861-2 across the continent.
 159 Quart-pot, bags, tinder-box, knife and spoon.
 160 Belt, seeds, shells.
 161 Fourteen pencil sketches taken *en route*, in frame.
 162 Pocket sketchbook of remarkable places and incidents *en route* to N.T.
 163 Piece bark of tree, Northern Territory; McDouall Stuart's initials, from the shores of the Indian Ocean.

G. Dagenhardt, of Orroroo, Exhibitor—

- 164 Original copy of second number of *South Australian Gazette and Colonial Register*, being an excellently preserved copy of the first paper printed in the colony; each sheet has been fixed with two glasses in three frames, hinged together.

Adams, Exhibitor—

- 165 Late C. B. Howard's Bible and Prayer-book, first Colonial Chaplain, and presented to his clerk, Mr. Adams.

William Garson, Exhibitor—

- 166 H.M. ship *Buffalo*.—This is a rough oil painting, by a midshipman of the *Buffalo*, young Pearce.

*Relics—***Mrs. Colonel Barber, Exhibitor—**

- 167 Nine native spears.
 168 Two boomerangs.
 169 Two pipestems, mounted in silver; bird's leg bones, albatross legs.
 170 Two Northern Territory necklaces and native bangles.

Old Colonists' Court—continued.

*Relics—***James Scott—**

- 171 Copy of *Adelaide Examiner*, 24th September, 1842, by George Dehane, one of our early papers, somewhat outspoken in character.
Customs Department, Port Adelaide, Lent by—Portraits of Collectors of Customs from 1836, viz.:—

- 172 Capt. Thomas Lipson, R.N.
 173 Sir R. R. Torrens.
 174 Capt. G. F. Dashwood, R.N.
 175 Capt. B. Douglas, N.T.
 176 J. W. Lewis, Esq.
 177 F. J. Sanderson, Esq.

Port Adelaide Institute—

- 178 Old order, promise to pay two and sixpence change. 1852. John Carruthers. These orders were used by some country settlers as a substitute for change.

William Shakeshaft, painter, of Kapunda—

- 179 John Hill holding flag at proclamation of the colony, Glenelg, December 28, 1836.

G. W. Cole, Exhibitor—

- 180 Bust late Rev. T. Q. Stow, by G. Cole, sculptor.

J. H. Angas—

- 181 Oil painting, portrait late George Hamilton, formerly Commissioner Police, early settler and overlander.

Wm. Rains—

- 182 Portrait, William Rains, pioneer.

Royal Commissioners—

- 183 Sample wax figures of lubra and piccaninnies, and male figure of aborigine, at entrance of Court.

- 35 G. A. Rogerson, Exeter—Piano, made by the Exhibitor.

- 36 S. Solomon, Adelaide—Stand, &c. Contractor for photography to the Exhibition.

- 37 P. and O. Steam Navigation Company (Elder, Smith, & Co., Agents, Adelaide)—Model of P. and O. ss. *Rosetta*.

- 38 Edmond Florimond Lefever, 68, Rue Josephat, Schaerbeck, } Exhibits from } Bronze statue, "Cinderella."

- 39 Chas. Brunin, 271, Rue Bogier, } Belgian Court. } A souvenir of Venice, "Pigeons of St. Marc."

- 40 P. and O. Steam Navigation Company (Elder, Smith, & Co., Agents, Adelaide)—Model of steamer representing the P. and O. Company's four new vessels, viz.:—the *Victoria*, *Britannia*, *Oceania*, and *Arcadia*.

- 41 Henry Schickel, Rundle-street—Exhibition bookstall.

- 42 J. W. Barnes, George-street, Norwood—Architectural modelling, "A Tribute to Apollo;" vase and pedestal and capital of column in pencil.

- 43 Bedford Wells—Carved table upon which previous exhibit stands.

- 44 Aerated Water and Brewing Company, Angas-street, Adelaide—Showcase containing aerated waters, cordials, liqueurs, bitters, &c.

- 45 W. H. Burford & Son, Sturt-street, Adelaide—Showcase containing candles, busts in stearine, samples of glycerine, margarine, pitch, oleine, oleic acid, &c., &c.

- 46 **Royal Commissioners**—Turnery specimens in Australian wood.
- 47 **J. Turner, Knightsbridge**—Wooden chain, without joints, carved out of solid apple wood.
- 48 **H. M. Wallenstein, Gouger-street**—Natural formation of willow-tree.
- 49 **W. J. Nott, Blanchetown**—Veneer of honeysuckle.
- 50 **Adelaide Crystal Ice Company, 45, Exchange, Adelaide**—Samples of rice starch, of two varieties, cornflour, and liquid ammonia.
- 51 **Royal Commissioners**—Ostrich eggs and carved walking-sticks.
- 52 **Arthur Hardy, M.P., Mount Lofty**—Samples of cork-bark and acorns, chestnuts, and filberts, grown by him at Mount Lofty.
- 53 **Wm. Andrews, Arcade, Adelaide**—Rubber stamps and specimens of stamping.
- 54 **J. H. Hamer, Grenfell Chambers, Grenfell-street**—Engravings on brass salver, designed and executed by the exhibitor.
- 55 **Meyers & Sons, North-terrace**—Specimens of dentistry, with set of false teeth in motion.
- 56 **E. Margetts, Parkside**—Tomato and Worcester sauces, pickles, &c.
- 57 **W. & M. Kimber, Woodleigh Gardens, Clare**—Home-made jams.
- 58 **C. J. Hamilton, c/o Ryan & Co., Gray-street, Adelaide**—Tomato and Worcester sauce.
- 59 **F. Warm, Stansbury**—Specimens of dried fruits, consisting of raisins, currants, dried apples, figs, prunes, apricots, and peaches, almonds, olive oil, silk cocoons, carob beans, cereals, wool, and agricultural seeds.
- 60 **Hall & Son, Norwood**—Cordials, liqueurs, and aerated waters.
- 61 **Wm. Murray, Glen Osmond**—Jams and marmalade, in glass jars.
- 62 **Wilkinson & Mason, 71, King William-street**—Samples of the following wines from the celebrated vineyards of Sir R. D. Ross, Sir Thos. Elder, Sir Samuel Davenport, Hon. John Crozier, Auldana vineyard, Mr. Wm. Gilbert, Mr. Thos. Hardy, Messrs. Smith & Sons, Messrs. S. & W. Sage, Mr. Wm. Jacob, Mr. B. Seppelt, Messrs. Penfold and Co., and Mr. J. Crompton, viz.:—Claret, riesling, chablis, saturne, grenache, shiraz, tokay, burgundy, muscatel, constantia, frontignac, sherry, and port.
- 63 **B. North, Bridge-street, Kensington**—Oil, olive, produce of the years 1885-6-7.
- 64 **Walters & Co., Freeman-street, Adelaide**—Apiarian appliances, cone foundations, fumigators, and section frames.
- 65 **B. Seppelt, Seppeltsfield, P.O., Greenock**—Trophy of wines, spirits, cordials, liqueurs, bitters, and vinegar; photograph of establishment; medals and diplomas; various specimens of export packages, barrels, cases, &c.
- 66 **Ryan & Co., Gray-street, Adelaide**—Aerated waters, ginger wine and brandy, bitters, limejuice, raspberry vinegar, quinine champagne, bottled ale and stout, tomato and Worcester sauces.
- 67 **G. L. Barnard & Co., Walkerville**—Numerous samples of olive oil.
- 68 **Menz & Co., Wakefield-street, Adelaide**—Trophy of biscuits.
- 69 **John Hood, Rundle-street, Adelaide**—Six enlargement photographs, hand-painted; water-color painting (church).
- 70 **Mrs. Strawbridge, Magill**—Painting of wild flowers from Kangaroo Island.
- 71 **G. Kinderman & Son, Rundle-street**—Trophy of brides' cakes, confectionery, and table decorations in sugar.
- 72 **Mr. J. F. Mellor, Holinfirth, Fulham**—Vase of flowers, made from fish scales, decorating an emu egg.
- 73 **Mrs. Teakle, Golden Grove**—Vase of shell flowers.

- 74 **H. Buring, Pirie-street, sole agent for Spring Vale Vineyard; proprietor, J. M. Richman, Esq.**—Trophy of wines, consisting of madeira, claret, mataro, sherry, port, grenache, palomino, blanco, reisling, old sherry, and showing cup awarded to J. M. Richman for full-bodied light wine, 1875, by the Royal Agricultural and Horticultural Society.
- 75 **Calder & Balfour, Rundle-street, Adelaide**—Trophy of biscuits of various descriptions.
- 76 **Crowder & Co., Franklin-street, Adelaide**—Aerated waters, raspberry, eucalyptus, and other bitters, quinine wine, lemon syrup, and sarsaparilla.
- 77 **Stephen & Co., Waymouth-street, Adelaide**—Bottled ale and stout, limejuice and syrups, bitters, ginger wine and brandy, currant wine, and other varieties.
- 78 **Angaston Court, represented by—**
S. Smith & Sons, Angaston—Photographs of Angaston and neighborhood.
Henry Marshall, Angaston—Dried fruits, mineral collection, and marble.
Sibley, Angaston Marble Co., Angaston—Mineral collection and marble.
Smith & Son, Yalumba Vineyard, Angaston—Canned fruits and tomatoes, fresh fruits; trophy of wines—consisting of port, sherry, claret, reisling, frontignac, constantia, and muscatel; medals and diplomas and silver cup.
Davey & Sons, Angaston—Trophy of wheat and its products, to the finest silk-dressed flours. Photograph of mill, and residence of the proprietor.
- 79 **Charles Todd, C.M.G., Postmaster-General, Adelaide**—Telegraphic telephone apparatus, showing the old systems and modern improvements.
- 1 Post, telegraph, telephone, and money-order office, showing system of private-lock boxes
 - 2 Telephone exchange
 - 3 Richards' self-recording barograph and thermograph
 - 4 Cook & Wheatstone's first five and one needle telegraph instruments
 - 5 Henley's magnetic double and single needle instruments
 - 6 Morse telegraph instruments of all kinds, including Siemens' recorders, ink-writers, and embosser
 - 7 Sounders
 - 8 Sending keys for open and closed circuits
 - 9 Relays, various—bi-polar, polarised, and differential
 - 10 Lightning arresters
 - 11 Switches and commutators
 - 12 Transmitters or pole changers for double-current lines
 - 13 Automatic repeaters
 - 14 Single, duplex, and quadruplex instruments
 - 15 Wheatstone's alphabetical telegraph instruments
 - 16 Siemens' " " " "
 - 17 Henley's " " " "
- Instruments for testing electrical circuits—
- 18 Sir Wm. Thomson's mirror reflecting galvanometer
 - 19 " " marine galvanometer
 - 20 M. Duprez dead beat reflecting galvanometer
 - 21 British post office tangent galvanometer
 - 22 Siemens Bro's. universal testing galvanometer
 - 23 " astatic Wheatstone bridge galvanometer
 - 24 Large astatic differential galvanometer

Postmaster-General—continued.**Telegraphic telephone apparatus—**

- 25 Sensitive horizontal
- 26 Galvanoscopes, different forms
- 27 Resistance coils, different forms, from 1 ohm to 250,000 ohms
- 28 Large resistance set, arranged as Wheatstone bridge
- 29 Small testing set for telephone lines
- 30 Keys for testing purposes
- 31 Electric clock
- 32 Instruments for testing electrical circuits
- 33 Watchman's time detector
- 34 Electro-motors
- 35 Experimental apparatus of various kinds
- 36 Batteries for different purposes

Telephones—

- 37 Receivers (80) of different kinds arranged as a trophy
- 38 Telephone sets, complete, mounted on board over telephone exchange
- 39 Telephone cable connecting box
- 40 Cable specimens—submarine, subterranean, and aerial
- 41 Postage and duty stamps
- 42 Postal notes
- 43 Thermo-electric pile
- 44 Browning's automatic spectroscope
- 45 Maclean's star spectroscope
- 46 Star maps, showing all stars down to the 5th magnitude above the horizon at Adelaide, at 9.30 p.m., in the middle of each month
- 47 Improved Stevenson's thermometer screen, with dry and wet bulb—maximum and minimum thermometers
- 48 Rain gauge
- 49 Richard Frère's barograph and thermograph

Exhibits lent to the Telegraph Department by the Eastern Extension, Australasia, and China Telegraph Company, Limited:—**Saunders' fire-alarm system' including—**

- 50 Receiving box of six vibrators
- 51 Electro-magneto reply box
- 52 Alarm boxes (5)
- 53 Case cable specimens
- 54 Exchange Telegraph Co's. type-printer
- 55 Photograph of type-printer transmitter
- 56 Saunders' automatic Morse register
- 57 “ “ cable transmitter
- 58 “ translation switch
- 59 “ Morse curb-current key
- 60 Bullock's Morse sounderets, in cases (2)
- 61 Saunders' double-fine wire lightning guard
- 62 Allan & Brown's small relay
- 63 “ large “
- 64 Sir Wm. Thomson's cable recorder, complete
- 65 Saunders' cable sending key

80 Aerated Bread Co., Waymouth-street, Adelaide—Trophy of biscuits.

81 Alex. Murray & Son, Coromandel Valley—Trophy of preserved jams, biscuits, brides' cakes, and confectionery, also medals and diplomas for the same.

82 T. Duryea, Bundle-street, Adelaide—Photographs and enlargements.

- 83 **Otto Boettger, Flinders-street, Adelaide**—Scientific instruments, theodolite and level of latest designs and newest improvements, specimens of gear cutting and pantographs; also testimonials from Surveyor-General (G. W. Goyder), Oswald Brown (late Hydraulic Engineer), and J. W. Jones, Conservator of Water.
- 84 **N. E. T. Kaines, Currie-street, Adelaide**—Showcase containing variety of South Australian wines (sherry, port, burgundy, claret, reising).
- 85 **Meteorological Society of S.A., Adelaide**—Instruments used in meteorological surveys.
- 86 **Royal Commission for S.A.**—Showcase of olive oils, from the plantations of Sir Samuel Davenport, Beaumont; Wm. Jacobs, Moorooroo; Stefano Alberto, Adelaide; A. & S. Monte, Glanville; Her Majesty's Gaol, Adelaide; G. L. Barnard, Walkerville; Anderson & Co.; Robertson, J. Angas-street; also essential oils prepared by G. A. Goyder, Surveyor-General's Department—extracted from S.A. plants—prepared and exhibited by direction of Hon. Commissioner of Crown Lands.
- 87 **Thos. Hardy, Bankside Vineyard**—Large vat, capable of holding 4,000 gallons, made of Tasmanian blackwood, and executed to order of T. Hardy, by J. F. Gurner, cooper, Adelaide, the interior of which is decorated with medals, diplomas, cups, &c.; also a display of wine of the following:—Reising, doradilla, old red, moolaroo (red and white), oomoo (red and white), Angaston sherry, frontignac, verdeilho, sweet white, old white, Nos. 1 and 2 claret, carbonet, old shiraz, sweet red, Angaston port, Australian port, and constantia; also, olive oil, pickled olives, almonds (of five varieties), dried apples and fruits, muscatels, valencia and other raisins, currants, &c.; views of Tintarra vineyard, looking north and south.
- 88 } **Royal Commission for S.A.**—Agricultural and horticultural trophies.
- 89 }
- 90 **Royal Commission for S.A.**—Wax model of blackfellow producing fire by friction. Modelled by A. Saupe.
- 91 **W. P. Stokes**—Neptune's cup, from Straits Settlement, found under 30 fathoms of water.
- 92 **United Vigneron Trophy**, representing wines from the following vineyards:—Highercombe, Birksgate, The Grange, Holmsdale, Bankside, Saltram, Beaumont, Oaklands, Moorooroo, Auldana, Spring Vale, Yalumba, Pewsey Vale, and Seppeltsfield.
- 93 **T. B. Robson, Hectorville**—Dried raisins, currants, almonds, and unfermented wine.
- 94 **Royal Commission for S.A.**—Bottled fruits, jellies, and preserves.
- 95 **Edwin Smith, Clifton Nursery**—Flower stand, with right to sell bouquets and plants.
- 96 **Royal Commission for S.A.**—Wax models of fruits, taken from original sizes, modelled especially for the Commissioners by Mrs. George Gray and Mrs. Roffe Searcy.
- 97 **E. B. Hayne & Co., Rundle-street**—
1 Collection of dried and everlasting flowers and grass.
2 Collection of garden and agricultural seed.
- 98 **Royal Commission for S.A.**—Large case. Transparencies of South Australian fruits. This handsome case was made by Messrs. MacDougall & Gow.
- 99 **Miss Laura Campbell**—Vase, containing wax models of fruit.
- 100 **Miss Fitzpatrick, North-terrace, Adelaide**—Carving in sepiä; bridal bouquet wreath of orange blossoms, and coat of arms carved from cuttle fish.

- 101 **E. & W. Hackett, Bundle-street, Adelaide**—Showcase, containing collection of cereals, garden seeds, native peach stones, almonds, chestnuts, horse chestnuts, evening primrose seed (the plant of which is used very much as fodder), walnuts, acorns, cohnuts, filberts, and basket of agricultural fodder plants (dried); this showcase was made by Messrs. Mayfield & Son.
- 102 **Penfold & Co.**—Collection of wines from Grange vineyard.
- 103 **George Clark, William-street, Norwood**—Eight-day skeleton quarter chime clock; eight bells; dead beat escapement; all wheel-cutting and pinion-making and entire mechanism is the personal work of exhibitor.
- 104 **H. A. Evans, Evandale**—Specimens of various dried fruits, tastefully and neatly arranged; decorated with photograph of orchard and vineyard of proprietor, and men and women at work in the process of preparing apples for drying. Agent in Adelaide, D. Comrie & Co., Gilbert-place, Adelaide.
- 105 **Coleman & May, Fairfield Apiary, Mount Barker**—Honey, in glass jars, for table purposes, and in tins especially made for keeping and export; section boxes, containing honey, beeswax, &c.; photograph of apiary.
- 106 **J. F. Lorraine, 109, King William-street**—Glass showcase, containing clock, mounted on model of the "Old Gum Tree," Glenelg.
- 107 **S. Schlank, Freeman-street, Adelaide**—An assortment of jewellery, neatly arranged.—Archbishop's staff, claret jug (with chased design representing the Adelaide Jubilee International Exhibition), two inkstands, emu and kangaroo, Adelaide coat of arms. These articles have been purchased by the Archbishop of Adelaide for transmission to the Papal Exhibition of Rome.
- 108 **A. L. Brunkhorst, Bundle-street, Adelaide**—Showcase, containing jewellery of all descriptions, epergnes, cups and vases, tankards, mounted emu eggs, tea and coffee services, inkstands, &c., &c.
- 109 **S.A. Government, represented by the Hon. Commissioner of Crown Lands**—A splendid display of gold in nuggets and specimens of gold-bearing quartz, obtained at the Teetulpa and other goldfields, and representing the following nuggets:—

No.	Description.	Weight.		
		Ozs.	dwts.	grs.
1	Nugget, Brady's Gully.....	19	7	5
2	" "	13	12	22
3	" "	4	16	6
4	" "	10	1	0
5	" "	10	8	6
6	" "	4	14	0
7	" "	3	16	0
8	" "	2	12	0
9	" "	4	0	0
10	" "	14	13	8
11	" "	3	3	12
12	" "	6	12	22
13	" Goslin's Gully.....	8	15	0
14	" Brady's Gully.....	11	7	7
15	" Goslin's Gully.....	5	4	16
16	" Brady's Gully.....	3	7	18
17	" "	8	14	0
18	" Goslin's Gully.....	7	1	12
19	" "	11	9	19
20	" "	7	19	11

S. A. Government—continued.

No.	Description.	Weight.		
		Ozs.	dwt.	grs.
21	Nugget, Brady's Gully	1	4	8
22	" " (the "Joker")	29	15	0
23	" "	21	8	12
24	" "	10	9	0
25	" Strawbridge's Gully	5	3	15
26	" Brady's Gully	7	16	6
27	" "	8	6	18
28	" "	9	2	0
29	" "	5	10	23
30	" "	7	11	0
31	" "	2	18	8
32	" "	4	9	8
33	" Goslin's Gully	13	17	22
34	" Brady's Gully	6	6	18
35	Two specimens, Brady's Gully, quartz and gold	—	—	—
36	Nugget, Brady's Gully	3	10	0
37	" "	3	12	2
38	Specimen, Dam Gully, quartz and gold	—	—	—
39	Nugget, Brady's Gully	2	9	12
40	" Dam Gully	2	4	4
41	" Brady's Gully	3	12	22
42	" "	8	13	3
43	" Gumeracha, Watt's Gully	14	8	0
44	Nugget, Echunga, Blackwood Gully	4	18	14
45	" "	2	6	10
46	Specimen, quartz and gold, Windlass Hill, Teetulpa	—	—	—
47	Nugget, Echunga, Blackwood Gully	1	15	10
48	" Brady's Gully	1	10	0
49	" Forest Range	4	14	0
50	" Echunga, Blackwood Gully	1	5	20
51	Specimen, quartz and gold, German Reef, Mount Pleasant	—	—	—
52	Nugget, Brady's Gully, exhibited by R. Sayers	1	16	12
53	" Deep Gully	12	1	6
54	Ten specimens, quartz and gold, Ironclad Reef, Much & McKay	—	—	—
55	Loose gold, Forest Range, Jas. Love's estate	43	9	1
56	" Morialta, Mrs. Baker's estate	—	—	—
57	" " exhibited by Mrs. Baker	—	—	—
58	Nugget, Teetulpa, with stand, exhibited by J. B. Carr	—	—	—
59	Loose gold, Teetulpa	117	0	0
59	" "	117	0	0
59	" "	117	0	0
59	" "	117	0	0
60	Ulocloo gold	—	—	—
61	Echunga crystalline gold, exhibited by V. Lawrence, Esq.	—	—	—
61	Do. do.	—	—	—
62	Barossa gold	2	8	3
63	Gold in quartz, from Penryn Mine, Mount Pleasant	—	—	—
64	Gold in quartz, Mount Pleasant	—	—	—
65	" Blumberg	—	—	—
66	Echunga gold	—	—	—

S. A. Government—continued.

No.	Description.	Weight. Ozs. dwts. grs.		
67	Surface stone, found near Quorn by Mr. White	—	—	—
68	Woodside, Brind Mine, nugget, J. C. F. J. . .	—	—	—
69	“ seven specimens quartz and gold . .	—	—	—
70	“ alluvial gold	—	—	—
71	Blumberg, gold in quartz, exhibited by Hon. D. Murray	—	—	—
72	Talunga, gold in quartz, 13 specimens, exhibited by J. T. Turnbull, Esq.	—	—	—
73	Mingary, quartz and gold	—	—	—
74	Forest Range gold	3	3	0
75	Quartz and gold, Mount Pleasant, Treloar & Co.	—	—	—
76	Nugget and specimen, Moonta claim, Ironclad Reef, Teetulpa	—	—	—
77	Brady's Gully	6	13	22
78	Woodside, nugget, no weight given	—	—	—
110	S.A. Government, represented by the Hon. Commissioner of Crown Lands—Showing cake of retorted gold, &c. :—			
	Large cake of gold, weighing 470ozs., value £1,880, result of 24 days' crushing in the month of June, 1887, obtained from 417 tons, from Alma Mine, Waukaringa.			
111	Dr. Cleland, Parkside—Silk cocoons, educated at Parkside Lunatic Asylum Magnanarie; also reeled silk and cocoons deposited by the worm in nests prepared for the purpose.			
112	Miss May Scott, Fernleigh Cottage, Norwood—Collection of Indian silks in raw state.			
113	S.A. Ostrich Company, Limited, Port Augusta—Display of ostrich feathers and eggs from birds reared on the farm of the company; photographs showing herds of ostriches on feeding ground, also process of collecting feathers, &c.			
114	J. M. Wendt, Rundle-street, Adelaide—Showcase containing spergne (valued at £250) and candelabras, scent caskets, prize cups (including one presented to the S.A. Yacht Club by Lord Brassey), inkstands, mounted emu eggs in all descriptions, diamond sets, tea and coffee services; also the celebrated spinel, the property of the Rev. A. Honnor, weighing 285 grains, the intrinsic value about £23,000, supposed to have been cut 400 years ago; gold specimens from Forest Range.			
115	Mrs. Higgins, Melbourne-street, North Adelaide—Patchwork table- cover in showcase.			

ART GALLERY.

- A. Saupe, modeller, Nelson-street, Stepney—**
- 116 Bust of Sir Samuel Davenport, K.C.M.G., L.L.D., modelled from life.
- 117 Bust of E. T. Smith, Esq., M.P.
- Henry Clayton, Artist to His Excellency the Governor, Albert-
terrace, Carrington-street—**
- 118 Portrait of Sir Samuel Davenport, K.C.M.G., painted full length
in oils.
- 118a Portrait of Sir W. C. Robinson, K.C.M.G.
- A. McCormac, Barton-terrace—**
- 119 Portrait of Sir Geo. Kingston, late Speaker House of Assembly, S.A.
- 120 Portrait of Sir R. R. Torrens, G.C.M.G.

EASTERN GALLERY.

- 121 **H. P. Gill, principal—Collection of exhibits by artists and students of
the School of Design.**

EASTERN ANNEXE.

- 122 **Surveyor-General's Department, Government Offices, Adelaide—**
 1 Map of Australia, showing railway connections, telegraphic and mail routes, and lines of exploration.
 2 Map of Australia, showing lands alienated and pastoral leases of S.A.
- 123 **J. Colton & Co., Currie-street, Adelaide—**Harness and saddlery, travelling boxes and trunks, dressing-cases, Gladstone bags, &c.
- 124 **F. H. Faulding & Co., King William-street, Adelaide—**Pharmaceutical preparations, essential oils, baking powders, perfumery, insect powder, &c.
- 125 **W. & T. Rhodes, Rundle-street, Adelaide—**Plumbing, bath and sanitary appliances.
- 126 **S. Moss (Wirrilda Jam Factory), Wirrilda, Stirling West—**Jams, preserves, and tomato sauce.
- 127 **Waverley Vinegar Company, West-terrace, Adelaide—**Vinegar, mustard, olive oil, &c.
- 128 **D. & J. Fowler, King William-street, Adelaide—**Confectionery, blended teas, preserves, jams, coffee, sauces, &c.
- 129 **Holden & Frost, Grenfell-street, Adelaide—**Saddlery and harness.
- 130 **A. Simpson & Son, Gawler-place, Adelaide—**Bedsteads, kitchen ranges, apiarian appliances, kerosine and gas stoves, ovens, galvanized tubs and buckets, fire and burglar-proof safes, &c.
- 131 **P. Gay, Rundle-street, Adelaide—**Billiard-table.
- 132 **(Mrs. J. L. Scott, Edgeware-road, Hyde Park—**Macrame lace.
Mr. J. L. Scott, Edgeware-road, Hyde Park—Specimens of turnery.
- 133 **W. E. Ekins, King William-street, Adelaide—**Guns, revolvers, and fittings of all descriptions.
- 134 **Ferd. Gaetjens, Elbe Villa, Wakefield-street, Adelaide—**Fancy fret-work.
- 135 **J. G. Nash, Hindmarsh-square, Adelaide—**Specimens of turnery in iron and steel.
- 136 **Miss M. Amey, South-terrace, Adelaide—**Two leatherwork frames.
- 137 **W. Kennedy, Noarlunga—**Carvings on slate.
- 138 **Earle Bros., Yongala—**Carving in bone, malachite, and silver, in conc-work frame.
- 139 **Port Pirie State School (R. H. A. Braddock, headmaster), Port Pirie—**Specimens of chemicals in experimental chemistry; results of class in scientific lessons, viz., chlorine gas, sulphide of iron, hydrogen, oxygen, sulphate of zinc, black and blue ink, starch from wheat, orange oil, lampblack, plaster of paris, cement, salt, soap, matches, &c.
- 140 **Mrs. H. Fry, Gover-street, North Adelaide—**Ointment.
- 141 **Anton Wolf, Nuriootpa—**Seaweed and seashell frame; also designs in gum seed-vessels in imitation of carving.
- 142 **Miss M. Margetts, Parkside—**Looking-glass in leather-work frame.
- 143 **F. W. G. Schroeder, East Pallant-street, Lower North Adelaide—**Walking-stick made from colonial wood.
- 144 **A. G. Moeser, Lobethal—**Chairs and table in cane work.
- 145 **Harry Gray, Young-street, Parkside—**Inlaid pierglass and looking-glass, consisting of 12,700 pieces.
- 146 **Miss C. J. Lindo, Whitmore-square, Adelaide—**Seed work looking-glass frame and stand.

- 147 **S. Schlank, Grenfell-street, Adelaide**—Baking powder, essences of lemon, peppermint, vanilla, olives, ginger, and cinnamon.
- 148 **Scrivens, Bros., Hindmarsh**—Show case of dressed leathers, leathers of various descriptions.
- 149 **J. Secombe & Son, Blackwood**—World-famed ointment.
- 150 **J. W. Birks, St. Vincent-street, Port Adelaide**—Hop bitters.
- 151 **F. Moller, Acland-street**—Bicycle of his own manufacture.
- 152 **Beare & Co., Hindmarsh-square, Adelaide**—Various specimens of window-blinds, Florentine, box, wire, outside, &c.
- 153 **Dallas & Co., Robe-street, Port Adelaide**—Venetian blinds.
- 154 **Chas. Cross, Gawler**—Indigestion drops, &c.
- 155 **Chance & Co., College Park**—Jams, jellies, preserves, tomato sauce, ketchup.
- 156 **Miss Werlin, Botanic-terrace, Adelaide**—Flowers and fancy ornaments made from fish scales.
- 157 **W. Cameron, & Co., Grenfell-street, Adelaide**—Splendid assortment of tobaccos of the following:—Raven Twist, St. Andrew's Twist, Eureka Twist, Two Seas Flatwork, Canary Bird Aromatic Flatwork, Eureka Aromatic Twist, and Flatwork, All the Rage Aromatic Twist Flatwork, Eureka Dark Flatwork, &c.
- 158 **C. Bishop, Brompton**—Glass bottles, &c., made at Brompton.
- 159 **J. T. Lapidge, King William-road, Unley**—Australasomine and ochre, dry and in oil.
- 160 **Price Maurice, Adelaide**—Angora goats' skins, also mats, made from Angora goats' skins, dyed and dressed by Mr. Carl Jahn.
- 161 **Mrs. Nelson & Son, Clifton House, Wakefield-street, Adelaide**—Ivory work, fish work, seed ornaments, lace work, and an assortment of fancy work.
- 162 **H. G. Schmidt & Co., Nelson-street, Stepney**—Large assortment of cigars.
- 163 **"Register" and "Observer"**—Enquiry Office, and stand with daily papers.
- 164 **W. Shearing, Hindmarsh**—Terra-cotta archways.
- 165 **City and Suburban Steam Brickmaking Company, Adelaide**—Various specimens of bricks, splay bricks, fire bricks, &c., made at the Blackwood works.
- 166 **F. N. Burchell—Water Conservation Office, Adelaide**—Designs, plans, and descriptions of canalisation and irrigation. (See main building, No. 8A.)

167 GOVERNMENT GEOLOGISTS' COURT.

H. Y. L. Brown, F.G.S., Government Geologist.

Mineralogical map of South Australia. By H. Y. L. Brown—

NOTES EXPLAINING THE GEOLOGICAL AND MINING MAP.

On this map the approximate areas occupied by rocks of different ages and kinds are shown.

The stratified rocks are classified as tertiary, mesozoic, palæozoic, and azoic; the igneous rocks as volcanic and plutonic.

Plutonic Rocks.—Granite outcrops in small areas near Kingston, and in various places in the Ninety-mile Desert, at Port Victor, Murray Bridge, Kangaroo Island, Yorke Peninsula, near Port Lincoln, Streaky Bay to Fowler Bay, Pidinga, Pritchard Desert, Warburton Ranges, &c.; and in larger and more extensive masses in the North-East, near Boolcoomata, Thackaringa, near Mount Babbage, and Mount Adams, north of Lake Frome, and is reported to constitute the prevailing rock of the Musgrave Ranges, in the extreme north-west of South Australia proper.

Government Geologist's Court—continued.

Porphyry, felspar porphyry, syenite, granulite, and greenstone are generally found near or associated with these rocks—the Gawler Ranges being principally composed of felspar porphyry.

A decomposed amygdaloid trap occurs in the neighborhood of Wootana, near Lake Frome, in connection with greenstone porphyry and serpentine rocks. With all the outcrops of granite rocks metamorphic gneiss and granite are associated, into which igneous dykes have been injected. These dykes are numerous in most of the old metamorphic and sedimentary rocks, and doubtless are of many different ages. On Yorke Peninsula there are granitic and metamorphic rocks unconformably overlaid by beds of crystalline fossiliferous marble, grit, conglomerate, &c., which are considered to be of Lower Silurian age.

In the main range, extending from Cape Jervis, in the south, to Mount Babbage, its northern extremity, there are dykes of granite, greenstone, porphyry, &c., which have been intruded into the stratified rocks, which are nowhere seen to overlie them unconformably—it is probable, therefore, that the granitic rocks of Yorke Peninsula are of a much greater age than those of the ranges extending from Cape Jervis northwards.

As a proof of the time which has elapsed between the intrusion of the various plutonic rocks, it has been observed that some of the old conglomerates containing granitic boulders have been pierced by veins of a more recent granite.

Metamorphic rocks, azoic or silurian gneiss, conglomerate, micaceous and hornblende schists, clay and micaceous slates, crystalline limestone or marble, quartzite, &c., are found to occur over all the area occupied by granitic rocks, and in conjunction with them. Into these, dykes of igneous rocks and masses are intruded. Some of the metamorphic, gneissic, and granite rocks consist of conglomerates containing water-worn pebbles, and boulders with crystals of felspar.

Silurian Rocks.—These consist of inclined conglomerates, grits, quartzites, sandstones, limestones, dolomites, clay, and micaceous slates and shales. No fossils have been observed in them generally, and so far as examined, they appear to be of the same age as the more highly metamorphic rocks, but are less altered through the absence of intrusive dykes. The crystalline limestones of Ardrossan contain trilobites and corals which have been recognised as Lower Silurian. There are bands of similar limestone on the eastern side of St. Vincent Gulf, interbedded with the slates and quartzites of the Mount Lofty Range.

West of Port Augusta, and in other places to the eastward, there are quartzites, shales, sandstones, and conglomerates in undulating and horizontal beds, which are apparently an upper series of rocks which may be of Devonian age, although no fossils have hitherto been observed in them.

The highly metamorphic, azoic, and silurian rocks extend in more or less continuous ranges from Kangaroo Island to Mount Babbage, near the head of Lake Frome, and to near Mount Nor.—West, with a north-easterly extension in the direction of the Barrier Ranges, in New South Wales.

Smaller patches occur on Yorke Peninsula, the Port Lincoln District, the Dennison and Warburton Ranges, and east of the Musgrave Ranges.

These are the mineral-bearing rocks, and in them copper, lead, gold, manganese, and other metals have been discovered, and in many cases worked, over a distance extending from south to north of more than six degrees of latitude.

Mesozoic Rocks (Cretaceous or Oolitic).—A large portion of the interior northward of the main range, extending into Queensland, New South Wales, and Western Australia, is occupied by rocks of mesozoic age. They occupy a depression, of which Lake Eyre is the lowest part. The physical aspect of the country is that presented by table hills and table lands, plains, and stony and sandy deserts, with vast salt lakes, such as Lakes Eyre, Frome, &c., into which discharge large watercourses and creeks, which are liable to floods during long

Government Geologist's Court—continued.

intervals, sometimes for years, caused by rain which falls on the surrounding ranges, which in some cases are hundreds of miles distant.

This region was originally a basin, which is now filled with more or less horizontal beds of clay, slate, limestone, gypsum, sand, gravel, &c., overlaid in patches by a yellow jasper rock, known as desert quartzite, fragments of which are strewn over the surface of the plains and downs.

This is the chief artesian water-bearing formation. The greatest depth at which a flowing or artesian well has been met with is at Tarkanina, where a large supply was struck by boring, at a depth of 1,200ft.

Tertiary Rocks.—The largest portion of South Australia is covered by tertiary and post-tertiary deposits.

Older tertiary rocks are found along the coast, from the Victorian border, near Mount Gambier, to Eucla, on the West Australian border. They extend inland for a considerable distance, up the Murray River, on the eastern side of the Mount Lofty Ranges; and occupy smaller areas at near Port Willunga, on Yorke Peninsula, and various other places, at generally a less elevation above the sea, although, in one or two instances, cappings are found at a higher elevation.

They consist of coralline and shell limestones, sandstone, clay, sands, calcareous sandstones, and argillaceous limestones, rich in fossils.

The Nullabor Plains, in the western portion of the province, between Fowler Bay and Eucla, are composed of hard crystalline limestone, resting on soft chalky limestone with flints. These beds form perpendicular cliffs, rising from 250ft. to 300ft. along the coast between the two places named, the formation extending inland over 100 miles. Fossils are very plentiful in these rocks wherever found.

Middle tertiary beds of limestone, calcareous sandstone, sandstone, shell limestone, &c., overlie the older tertiaries along the coast.

The volcanic rocks, consisting of basalt, lava, scoria, ash, &c., of the Mount Gambier district, are of a newer age than the older tertiary limestone. Mount Gambier and Mount Schank are two of the principal points of eruptions. Volcanic rocks also occur in the Mount Burr Range, not far from Mount Gambier.

Pliocene Tertiaries.—Old river deposits, which appear to be of the same age as the old gold drifts of Victoria and New South Wales, occur as cappings, and covering large areas, at elevations sometimes amounting to 1,000ft. above the sea, at the Mount Lofty and other portions of the ranges. It is evident that they are the remains of an old river system.

Where prospected, as at Barossa and Echunga, gold has been found in them. A very large area still remains available for this purpose in the neighborhood of these goldfields and elsewhere.

Post Tertiary and Recent.—All the previously mentioned rocks are, to a less or greater extent, covered over in patches by a varying thickness of alluvium. Sand in dunes, as along the coast, or in wide undulating plains and ridges, as in the interior. The extent of country covered by these hills and rivers is very great.

The colored discs on the map are intended to indicate the chief localities where metals have been discovered and mined.

Gold	Gold
Copper	Vermilion
Silver-lead	Blue.

The rock formations are indicated on the map as under:—

Post Tertiary and Tertiary	By a Green tint
Cretaceous and Oolitic	“ Brown “
Silurian and Devonian	“ Purple “
Silurian Limestone	“ Blue “

Government Geologist's Court—continued.

Silurian	"	Purple tint, with red bars
Plutonic	"	Pink tint
Volcanic	"	Red "

Ice-marked rocks from Hallett's Cove.

The locality is on the sea-coast, at a place called Hallett's Cove, in the Hundred of Noarlunga, and distant from Adelaide, in a south-westerly direction, about eleven miles.

The cliffs forming the northern boundary of the cove consists of purple shales, slates, and quartzites, which have been contorted and twisted into an anticlinal, the crown of which extends along the edge of the crown northward for some distance, forming a narrow strip of rock outcrop; the latter is observed to be polished, and sometimes striated.

The most southern of these exposures is immediately over the southern end of the anticlinal.

Here, at a height of about 60ft. or 70ft. above the sea, on top of the cliff, over an area of some 30 square yards, the rock has been smoothed and striated. This floor dips S.S.W., at an angle of about 10°. The groovings are of all sizes up to one-half inch in width, with a depth of about one-sixteenth of an inch. The general direction of the grooves are from N. 30° W. and N.W. to W.N.W. The rock is a purple slaty shale.

The second exposure is close to the edge of the cliff, about 300 yards further northward. The polished and grooved rock is here a hard quartzose sandstone, at a height of about 50ft. or 60ft. above the sea. The area exposed is some 12 or 16 yards; it dips west, at an angle of from 25° to 30°, and the direction of the grooves is north and south along it in horizontal and inclined lines.

Boulders, pebbles, and shingle of gneiss, granite, and quartzite, sandstone, limestone, slate, &c., together with ragged blocks and masses of grey limestone and limestone boulder conglomerate, on a brittle shale and clay, are scattered about on the slope of the hill above the ice-scratched rock.

The ice grooves and polishing of the rocks appear to have been caused by floating drift-ice in narrow channels, or along the shore; the boulder-drift having been deposited on the melting of the ice which stranded on the spot.

168 Models of gold from—

- 1 Bird-in-Hand Mine, 6,079 ozs., value, £18,669.
- 2 New Era, 7,300 ozs., result of two years' work, value, £18,500.
- 3 Alma Mine, 9,310 ozs., value, £34,683 3s. 4d., result of working to 31st May, 1887.

168a Specimens from Reefs in Teetulpa—

- 1 Colleen Bawn Reef—N. and S., three shafts, 35ft., 29ft., 56ft.; width of reef, 18in., 27in., 14in. Situate Goslin's Gully.
- 2 Ben Lomond—N. and S., 2 miles from township; depth, 12ft.
- 3 Tucks All—N. and S., near township; 12ft.
- 4 Star of the East—Situate Manna Hill, 15 miles from Teetulpa; N. and S., reef 30ft. deep. Last crushing, 2oz. to the ton.
- 5 Blue Star—40ft., N. and S., two miles from township. Last crushing, over 2ozs. to ton.
- 6 Mariner's Hope Reef—Near Teetulpa. New reef not opened up.
- 7 Iron Clad—South, depth of shaft, 45ft; best gold on field showing.
- 8 Comet—Adjoining "Blue Star." Specimen obtained at a depth of 30ft.
- 9 Aurifera—Dam Gully, near township. Two shafts on property, both down about 50ft. A well and clearly defined reef all the way. N. and S.
- 9a Aurifera South
- 10 Eureka.
- 11 J. C. Bray—Adjoining "Colleen Bawn," at a depth of 87ft.

- 12 Jaffa—Adjoining "Myrtle May," Goslin Gully, 87ft.
 - 13 Waukaringa—Reef not known.
 - 14 Major Mitchell—5 miles N. of township. Obtained at depth of 50ft., 55ft., 70ft., 65ft., from two shafts.
 - 15 Lord Clyde—13 miles east of township.
 - 16 The Gladstone—Depth of shaft, 50ft.
 - 17 Elsie May.
 - 18 Adelaide Jubilee—Shaft 29ft. deep.
 - 19 Edward Parry.
 - 20 Bessy—40ft.
 - 21 Teetulpa—12ft.
 - 22 Aristides—38ft.
 - 23 Warrior Reef—70ft.
 - 24 Cross and Crown—Manna Hill, 17ft.
- 168b Specimens from Quartz Reefs—Teetulpa and elsewhere—**
- 1 Warrior Reef—Twelve feet from surface.
 - 2 Shamrock Reef—Thirty feet.
 - 3 Victory Reef—McFarlane & Fraser.
 - 4 Horseshoe Line—Ten feet from surface.
 - 5 Londonderry Line—Twenty-six feet from surface.
 - 6 Londonderry Line—Twenty-five feet from surface.
 - 7 Elsie May Mine.
 - 8 Cosmopolitan Reef—Lambman & Fielders.
 - 9 Jubilee Reef—W. H. Howard.
 - 10 Blue Star Reef.
 - 11 Blocks of arsenical pyrites from Alma Mine, Waukaringa, also case with pyrites in water, and model showing quantity of gold obtained. Exhibited by the proprietors.
 - 12 Specimens of quartz and gold from Koh-i-noor Mine, Kangaroo Island—Exhibited by proprietors.
 - 13 Model showing amount of gold obtained from Bird-in-Hand Mine, Woodside, and photographs of buildings, &c. Exhibited by proprietors.
 - 14 Model showing amount of gold obtained from New Era Mine, Woodside. Exhibited by proprietors.
 - 15 Block of auriferous quartz from German Reef, Talunga—Exhibited by Mr. A. Caudan.

169 Chamber of Manufactures, Adelaide—(1) Specimens of strata upon which the city of Adelaide stands, obtained from a bore in the Waterworks yard. (2) Cubes of South Australian building stones, cut by Mr. H. Fraser, Franklin-street, as under:—

1. Springbank quarry, near Mitcham.—This stone is not much used, as better quarries have been opened.

2. Yorke's Peninsula.—This stone can be had in immense blocks, and is suitable for breakwaters, as marine plants readily attach themselves to it.

3 and 4. Stirling Freestone.—Two samples. The whole of this district consists of freestone strata. Much used for villa and cottage building, and also used as piers of railway bridges in neighborhood.

5 and 6. Finniss freestone.—Two samples. This, although not a new discovery, has only lately begun to be worked, and is reported by some of the leading architects and others to be the best freestone yet discovered in the colony.

7 and 8. Mount Gambier freestone (Oolite).—Two samples. From the Hanging Rocks quarry. The internal enrichments of the Adelaide University are carved of this stone.

9 and 10. Teatree Gully freestone.—Two samples. Main public buildings in Adelaide are constructed of this freestone, notably the General Post Office,

Government Geologist's Court—continued.

the Town Hall buildings, the new Supreme Court, the Cathedral at North Adelaide, and the National Bank.

11. Mitcham freestone.—Is largely used in house-building.

12. Gumeracha soapstone.—Generally used in the construction of furnaces and ovens, and valuable on account of its fire-resisting qualities.

13 and 14. Mount Gambier dolomite.—Two samples. From the Hanging Rock quarries. Not much used, as it is difficult to work.

15. West Island granite, near Port Victor—Quarries only recently opened. The basement of the new Parliament Buildings is constructed of this granite.

16. Port Elliot granite.—Not procurable in large blocks nor in great quantity.

17 and 18. Angaston marble.—Two samples. Quarries not long opened. To be had in large quantities and of any size.

18 and 19. Kapunda marble.—Two samples. Can be had in any quantity and size, and in various shades of color.

20. Rapid Bay marble.—To be had in large quantities, but is not in general use, as it is difficult to work.

21. Tapley Hill rubble building stone.—Quarry not long opened, but is likely to come into general use in consequence of its great hardness, and its being easily squared with the hammer.

22. Dry Creek stone.—From Labor Prison quarries. Much used in building and for road metal, of which large quantities are turned out annually by the convicts.

23. Glen Osmond rubble building stone.—The greater part of the city of Adelaide is built of this stone.

24. Limestone.—Underlying the clay upon which the city of Adelaide is built.

25. Strathalbyn bluestone.—To be had in very large pieces. Used for street-kerbing, &c.

26. Tarlee.—Inexhaustible supply of this stone. Used for street-kerbing and rough paving.

27. Chinkford.—Flagstone, rubbed.

28. Chinkford.—Natural face.

29. Chinkford.—Rubbed.

30. Chinkford.—Flagstone, natural face.

[Note.—Chinkford is largely used for mantelpieces, shelving, and other purposes, being easily wrought, and yet tough and durable.]

31. Willunga.—Flagstone, rubbed face.

32. Willunga.—Natural face.

33. Willunga.—Rubbed face.

34. Willunga.—Natural face.

[Note.—This stone has been much used in the paving of the footpaths of the city, verandah and kitchen floors, &c. Roofing-slates are also obtainable from the same quarries. A considerable trade has been established in this slate with the other colonies; but for flagging purposes, owing to its close laminated nature, it is becoming disused, the Mintaro flagstone taking its place.]

35. Mintaro.—Rubbed face.

36. Mintaro.—Natural face.

37. Mintaro.—Rubbed face.

38. Mintaro.—Natural face.

[Note.—Mintaro is principally used for paving, street-flagging, &c., and can be had in any quantity, and of immense size.]

170 **H. M. Addison, Flinders-street, Adelaide**—Antimony and nickel, ulmanite. A mineral containing antimony and nickel occurs at Gill Bluff, near Mount Lyndhurst. An analysis of the ore from this locality gives nickel 22·91 per cent.; cobalt (trace); antimony, 51·71; sulphur, 7·22; arsenic (trace), 0·60; bismuth, 1·45; ferrous oxide, 3·23; lime, &c., 3·17; insoluble matter, 4·21.

- 171 **W. C. Barton, Quorn**—Manganese from Etna Mine, $6\frac{1}{2}$ miles N.E. of Gordon.
- 172 **Capt. Prout**—Cone trophy of manganese from Hammond.
- 173 **T. S. Horn, Adelaide**—Silver ore, from Eureka Mine, Woodside; taken from 100ft. level. Assays $5\frac{1}{2}$ ozs. and $8\frac{1}{2}$ ozs. of gold and 15ozs. silver to the ton of 20cwt.
- 174 **Royal Commissioners for S.A., Adelaide**—Tin from Northern Territory smelted in Adelaide.
- 175 **F. C. Singleton, Adelaide**.—Ore from Aclare Silver Mine, situated 30 miles east of Adelaide, taken from depths varying from 60ft. to 113ft. This ore yields the following metals:—Gold, silver, nickel, lead, zinc, antimony, iron, and sulphur; the yield of silver ranging from 302ozs. to 570zs. to the ton, and of gold from 30zs. to 13dwt. to the ton.
- 176 **J. B. Austin, Freeman-street, Adelaide**—Rocks, minerals, and mining products.
- 177 **James Hawke, Teatree Gully**—Fireclay, pipeclay.
- 178 **H. Kempson, Teatree Gully**—Pipeclay.
- 179 **John Martin, Hall-street, Norwood**—Petrified trunk of tree and petrified cuttle-fish bone, found at junction Hamilton and Stewart's Creek and Jacob's Well.
- 180 **Royal Commissioners**.—Collection of South Australian minerals, prepared for the Commission by T. C. Cloud, Esq., A.R.S.M., F.C.S., F.I.C.

Graphite (Plumbago).

- 1. Graphite—Port Lincoln: Government Geologist.

Lignite.

- 2. Impure lignite—Pedigna, near Fowler's Bay: Government Geologist.

Barite (Barytes—Heavy Spar).

- 3. Massive barite—Great Gladstone Mine. J. B. Austin.

Gypsum.

- 4. Fibrous gypsum—Stuart's Range, Central Australia: J. Warren.
- 5. Gypsum—South Australia: J. B. Austin.
- 6. Crystals of gypsum, from the mud forming the shores of salt lakes, South Australia: Adelaide Museum.
- 7. Gypsum—Nonning, Gawler Ranges: Government Geologist.
- 8. Crystals of gypsum, from the mud forming shores of salt lake, Yorke Peninsula: Adelaide Museum.
- 9. Gypsum—Wirrealpa Run, Central Australia: J. B. Austin.
- 10. Gypsum—Kanyaka: J. B. Austin.

Calcite.

- 11. Calcite—Mount Coffin: J. B. Austin.
- 12. Calcite, associated with copper ore—Yudanamutana Mine: V. Lawrance.
- 13. Calcareous stalactite—Curramulka: Government Geologist.
- 14. Calcareous tufa—Angaston Creek: Adelaide Museum.
- 15. Calcite—South Australia: Adelaide Museum.
- 16. Short prismatic crystals of calcite, exhibiting terminal planes of the prism, coated with pyrite—Wallaroo Mine: H. R. Hancock.
- 16A. Ferro-calcite—Wheal Nitschke: Adelaide Museum.

Aragonite.

- 17. Aragonite, in chalcocite—Wallaroo Mine: J. B. Austin.

Dolomite.

- 18. Pseudo-morphous dolomite—Lake Eyre, Central Australia: J. Warren.

Quartz.

19. Quartz crystal, enclosing chlorite—Mount Lofty: V. Lawrance.
20. Large quartz crystal, containing three cavities partially filled with liquid—near Clare: C. W. Colman.
21. Quartz—Wallaroo Mine: Adelaide Museum.
22. Quartz crystal—Emu Flat, near Clare: J. B. Austin.
23. Quartz crystal—Emu Flat, near Clare: J. B. Austin.
24. Quartz, with chalcopyrite—Yednaluc: J. B. Austin.
25. Quartz crystal—Coonatto: W. T. Bednall.
26. Quartz and chalcopyrite—Yednaluc: J. B. Austin.
27. Quartz crystal—South Australia: Adelaide Museum.
28. Silicious stalactite—North Para, near Gawler: Adelaide Museum.

Chalcedony.

29. Silicified wood—Gawler: J. B. Austin.
30. Silicified wood—Gawler: J. B. Austin.
31. Chalcedony—South Australia: J. Phillips.
32. Flint, from the limestone rocks at Eucla: Government Geologist.
33. Silicified wood—South Australia: J. Warren.

Agate.

34. Agate—Stuart's Creek, Central Australia: Adelaide Museum.
35. Polished agate—Northern Territory: Adelaide Museum.

Jasper.

36. Jasper—Stuart's Range, Central Australia: J. Warren.

Opal.

37. Common opal—Mount Crawford: J. Warren.
38. Common opal—Mount Crawford: J. Warren.
39. Honey opal—Angaston: Adelaide Museum.
40. Opal—Angaston: Adelaide Museum.
41. Opal—Angaston: Adelaide Museum.

Pyroxene (Augite.)

42. Pyroxene, var. smaragdite—Parliamentary Mine, Woodside: Government Geologist.

Amphibole (Hornblende).

43. Amphibole—Mount Crawford: J. Warren.

Beryl.

44. Beryl—Mount Crawford: J. Warren.
45. Beryl, in quartz—Mount Crawford: J. Warren.
46. Beryl—Mount Crawford (said to be the first specimen of this mineral found in South Australia): J. Warren.
47. Several specimens of beryl—Mount Crawford: J. Warren.
48. Large beryl—Mount Crawford: R. Snelgrove.
49. Beryl—South Australia: Adelaide Museum.
50. Beryl, in quartz—South Australia: Adelaide Museum.

Chrysolite.

51. Chrysolite, var. Olivine—Mount Gambier: Government Geologist.
52. Chrysolite, var. Olivine—Mount Gambier: Government Geologist.

Garnet.

53. Garnet—Mount Babbage: Government Geologist.
54. Garnets in white talc—Kanmantoo: Adelaide Museum.

Muscovite (Common Mica)

55. Muscovite—South Australia : J. Warren.

Margarite.

56. Margarite—Woodside : Government Geologist.

Orthoclase common (Feldspar).

57. Portion of crystal of orthoclase—Angaston : W. T. Bednall.
 58. Large crystal of orthoclase—Angaston : J. Phillips.
 59. Portion of a large crystal of orthoclase—Angaston : Adelaide Museum.

Talc.

60. Talc—Mount Crawford : J. Warren.
 61. Talc—Barossa Ranges : Adelaide Museum.

Serpentine.

62. Serpentine—Mount Crawford : J. Warren.

Kaolinite.

63. Kaolinite—Teatree Gully : Government Geologist.

Rutile.

64. Rutile—Mount Crawford : J. Warren.
 65. Rutile—Oonatra Water : Government Geologist.

Cassiterite (Oxide of Tin).

66. Stream tin—Snadden's Creek, Northern Territory : Adelaide Museum.
 67. Stream tin—Mount Wells, Northern Territory : Adelaide Museum.
 68. Stream tin—Mount Wells, Northern Territory : Adelaide Museum.
 69. Stream tin—Bamboo Creek, Northern Territory : Adelaide Museum.
 70. Cassiterite—Mount Wells, Northern Territory : Government Geologist.
 71. Cassiterite—Mount Wells, Northern Territory : Adelaide Museum.
 72. Stream tin—Northern Territory : Government Geologist.

Molybdenite.

73. Molybdenite—Yelta Mine, Yorke Peninsula : V. Lawrance.
 74. Molybdenite—South Australia : J. B. Austin.
 75. Molybdenite, with chalcopyrite—Yelta Mine, Yorke Peninsula : R. Stuckey.

Bismuthinite (Sulphide of Bismuth).

76. Auriferous bismuthinite—Balhannah Mine : Adelaide Museum.
 77. Bismuthinite—Balhannah Mine : J. Phillips.
 78. Bismuthinite—Balhannah Mine : J. Phillips.
 79. Bismuthinite—Balhannah Mine : R. Stuckey.
 80. Bismuthinite, with pistomesite—Balhannah Mine : J. Phillips.
 81. Bismuthinite—Balhannah Mine, J. Phillips.
 82. Bismuthinite—Balhannah Mine : J. Phillips.

Bismutite (Carbonate of Bismuth).

83. Bismutite—Balhannah Mine : J. Phillips.

Hæmatite.

84. Block of hæmatite, broken into three pieces, illustrating the mode of occurrence of the so-called kidney iron ore ; contains about 68 per cent. iron—South Australia : Francis H. Clark & Son.
 85. Micaceous hæmatite, containing about 65 per cent. iron—Angaston : Francis H. Clark & Son.

86. Micaceous hæmatite, containing about 60 per cent. iron—Angaston: Francis H. Clark & Son.
87. Micaceous hæmatite—Mount Jagged: Francis H. Clark & Son.
88. Hæmatite—Pewsey Vale: Francis H. Clark & Son.
89. Hæmatite—Bugle Ranges: Francis H. Clark & Son.
90. Hæmatite—near Port Lincoln: Francis H. Clark & Son.
91. Micaceous hæmatite—Pewsey Vale: Francis H. Clark & Son.
92. Pseudo-morphous crystal of hæmatite—Lake Eyre, Central Australia: J. Warren.
93. Ochreous hæmatite, used by the natives of the interior for anointing their bodies—Parachilna: V. Lawrance.
94. Hæmatite, sub-species martite, in the form of octahedral crystals embedded in micaceous hæmatite—Carey Gully, Mount Lofty: Francis H. Clark & Son.

Limonite (Brown Hæmatite).

95. Limonite—near Kanmantoo: Francis H. Clark & Son.
96. Limonite—Sixth Creek: Francis H. Clark & Son.
97. Limonite—Hindmarsh Valley: Francis H. Clark & Son.
98. Limonite, containing 53·7 per cent. iron, 1·20 per cent. phosphoric acid, and 0·42 per cent. sulphuric acid—Hindmarsh Valley: Francis H. Clark & Son.
99. Limonite—South Australia: J. Warren.
100. Limonite—Munjibbie: Adelaide Museum.
101. Limonite—Nuccaleena Mine: J. B. Austin.
102. Cubical Crystals of Limonite, pseudomorphs after pyrite—Mount Margaret: Adelaide Museum.
103. Cubical Crystals of limonite, pseudomorphs after pyrite—Blinman: Adelaide Museum.
104. Limonite—near Mount Coffin: Government Geologist.

Iron manufactured in South Australia from some of the foregoing iron ores.

105. Bar iron worked up: Francis H. Clark & Son.
106. Specimen of bar iron twisted cold, made by the direct process in crucible: Francis H. Clark & Son.
107. Six specimens of iron, made by the direct process, in crucible: Francis H. Clark & Son.

Siderite.

108. Siderite—near Blinman: Government Geologist.

Pistomesite.

109. Pistomesite—Balhannah Mine: Adelaide Museum.

Pyrite (Iron Pyrites).

110. Pyrite—Yelta Mine, Yorke's Peninsula: V. Lawrance.
111. Crystals of pyrite, in clay slate—Bundaleer: Adelaide Museum.
112. Pyrite—Echunga Gold Mine: Government Geologist.
113. Pyrite—Queen Gold Mine, Echunga: Government Geologist.
114. Pyrite—Taliaker Mine: Adelaide Museum.

Oxide of Manganese.

115. Dendritic markings of oxide of manganese on clay slate—Bundaleer Range: Adelaide Museum.
116. Pyrolusite—Tintarra: Government Geologist.
117. Oxide of manganese—Gordon, near Quorn: G. Prout.
118. Oxide of manganese—Gordon, near Quorn: G. Prout.
119. Oxide of manganese—Gordon, near Quorn: G. Prout.
120. Wad, var. asbolite—Wooltana: Government Geologist.

Sphalerite (Zinc Blende).

121. Sphalerite—South Australia : Adelaide Museum.
 122. Ore, chiefly composed of sphalerite, and containing silver—Aclare Mine : F. C. Singleton.
 123. Ore, composed of sphalerite and antimonial lead ore, containing silver—Aclare mine : F. C. Singleton.

Cerussite (Carbonate of Lead).

124. Cerussite in galenite—Avondale Mine, near Farina : Government Geologist.

Wulfenite (Molybdate of Lead).

125. Wulfenite—Avondale Mine, near Farina : Government Geologist.

Galenite (Galena).

126. Galenite—Coromandel Valley : V. Lawrance.
 127. Galenite—Talisker Mine : J. B. Austin.
 128. Galenite—Near Normanville : J. B. Austin.
 129. Galenite—Near Normanville : J. B. Austin.
 130. Galenite—Talisker Mine : J. B. Austin.
 131. Galenite—Avondale Mine, Near Farina : Government Geologist.
 [Note.—The proportion of silver in the galena from different parts of the colony varies considerably ; existing in some cases only to the extent of a few grains per ton of ore, while some samples from the Talisker Mine have yielded 90ozs. to the ton.]

Antimonial Lead Ore.

132. Antimonial lead ore, containing 224ozs. of silver to the ton—Aclare Mine : F. C. Singleton.
 133. Ore, composed chiefly of antimonial lead ore with sphalerite, containing silver—Aclare Mine : F. C. Singleton.

Ullmannite.

134. Ullmannite with ankerite—Gill's Bluff : Government Geologist.

Native Copper.

135. Native copper—Moonta Mine : R. Stuckey.
 136. Native copper—South Australia : J. B. Austin.
 137. Native copper—Yorke Peninsula : Adelaide Museum.
 138. Large specimen of native copper—Moonta Mine : Proprietors Moonta Mine, Limited.

Cuprite (Red Oxide of Copper).

139. Cuprite, with native copper—Burra Burra Mine : J. B. Austin.
 140. Massive cuprite, with native copper, and crystallized malachite—South Australia : J. B. Austin.
 141. Cuprite—Kurilla Mine : Adelaide Museum.
 142. Cuprite—Moonta Mines : R. Stuckey.
 143. Earthy cuprite (tile ore)—Burra Burra Mine : J. B. Austin.
 144. Cuprite with native copper—Burra Burra Mine : J. B. Austin.
 145. Cuprite on native copper—Moonta Mine : R. Stuckey.
 146. Cubical crystals of cuprite—South Australia : J. B. Austin.
 147. Cubical crystals of cuprite, with crystalline malachite—South Australia : J. B. Austin.
 148. Crystals of cuprite—Moonta Mine : H. R. Hancock.
 149. Crystallized cuprite—Moonta Mine : H. R. Hancock.
 150. Crystallized cuprite—Moonta Mine : H. R. Hancock.

Covellite.

151. Covellite, coating chalcopyrite—South Australia : Adelaide Museum.

Bornite (Purple Copper Ore).

152. Bornite and quartz—Lady Alice Mine : J. B. Austin.
 153. Bornite, with chalcopyrite—Moonta Mine : Adelaide Museum.
 154. Bornite, with chalcopyrite—Moonta Mine : Adelaide Museum.

Chalcopyrite (Copper Pyrites).

155. Crystallized chalcopyrite, with quartz—Walleroo Mine : W. T. Bednall
 156. Chalcopyrite, with crystals of pyrite, near Montacute Mine : J. B. Austin.
 157. Chalcopyrite—Moonta Mine : Adelaide Museum.
 158. Chalcopyrite, var. peacock ore—Moonta Mine : Adelaide Museum.
 159. Chalcopyrite—Moonta Mine : Adelaide Museum.
 160. Crystallized chalcopyrite, with quartz—Walleroo Mine : Adelaide Museum.

Azurite (Blue Carbonate of Copper).

161. Azurite—Burra Burra Mine : J. B. Austin.
 162. Azurite, with malachite—Burra Burra Mine : J. B. Austin.
 163. Nodule of azurite, broken in two—Burra Burra Mine : J. B. Austin.
 164. Azurite, with malachite—Kurilla Mine : Adelaide Museum.
 165. Azurite, near Franklin Harbor : Adelaide Museum.
 166. Nodules of massive azurite, coated and cemented together by silicious matter : the latter has been partly removed—Burra Burra Mine : Adelaide Museum.
 167. Azurite on chrysocolla—Burra Burra Mine : J. B. Austin.
 168. Azurite and malachite—Burra Burra Mine : J. B. Austin.
 169. Azurite and malachite—Burra Burra Mine—J. B. Austin.
 170. Nodular azurite—Burra Burra Mine : Adelaide Museum.
 171. Broken nodule of azurite—Burra Burra Mine : Adelaide Museum.
 172. Azurite on chrysocolla—South Australia : J. Phillips.
 173. Massive azurite, with malachite—Kapunda Mine : J. B. Austin.
 174. Azurite—Burra Burra Mine : Adelaide Museum.
 175. Azurite—South Australia : Adelaide Museum.

Malachite (Green Carbonate of Copper).

176. Malachite—Burra Burra Mine : Adelaide Museum.
 177. Malachite—Burra Burra Mine : Adelaide Museum.
 178. Malachite—Burra Burra Mine : Adelaide Museum.
 179. Malachite—Burra Burra Mine : Adelaide Museum.
 180. Crystallized malachite on cellular limonite—New Cornwall Mine : J. B. Austin.
 181. Malachite—Burra Burra Mine : J. B. Austin.
 182. Massive malachite, with azurite—Burra Burra Mine : J. B. Austin.
 183. Malachite, slightly coated with chrysocolla—Burra Burra Mine : J. B. Austin.
 184. Crystalline malachite in ferruginous opal. Yudanamutana Mine : J. B. Austin.
 185. Malachite—Burra Burra Mine : Adelaide Museum.
 186. Malachite—Burra Burra Mine : Adelaide Museum.
 187. Specimen of malachite, illustrating stalactitic mode of formation—Burra Burra Mine : Adelaide Museum.
 188. Malachite—Burra Burra Mine : Adelaide Museum.
 189. Malachite—Burra Burra Mine : Adelaide Museum.
 190. Malachite—Burra Burra Mine : Adelaide Museum.
 191. Malachite—Burra Burra Mine : Adelaide Museum.
 192. Crystalline malachite—Burra Burra Mine : J. B. Austin.

193. Crystalline malachite, slightly coated with limonite—South Australia : J. B. Austin.

194. Crystalline malachite—South Australia : J. B. Austin.

Chrysocolla (Hydrous Silicate of Copper).

195. Chrysocolla, with crystallized malachite and azurite—Burra Burra Mine : J. B. Austin.

196. Chrysocolla—Burra Burra Mine : J. Phillips.

Atacamite (Hydrous Oxychloride of Copper).

197. Atacamite—New Cornwall Mine : J. B. Austin.

198. Atacamite—South Australia : Adelaide Museum.

199. Atacamite—South Australia : Adelaide Museum.

200. Crystal of Atacamite—New Cornwall Mine : Adelaide Museum.

201. Atacamite—New Cornwall Mine : J. Phillips.

202. Broken crystal of Atacamite—New Cornwall Mine : J. B. Austin.

203. Atacamite—New Cornwall Mine : J. B. Austin.

Gold.

204. Native gold, in quartzose conglomerate—Barossa : Adelaide Museum.

205. Native gold, in quartzose conglomerate—Barossa : Adelaide Museum.

206. Native gold, in quartzose conglomerate—Barossa : Adelaide Museum.

207. Native gold, in conglomerate—Barossa : Adelaide Museum.

208. Native gold, in conglomerate—Barossa : Adelaide Museum.

209. Auriferous quartz—German Reef : Adelaide Museum.

210. Filamentous gold, on soft ferruginous sandstone : Adelaide Museum.

211. Rolled quartz pebble, with native gold—Onkaparinga : Adelaide Museum.

212. Quartz, cemented with brown iron ore, and containing native gold—Stirling Reef, Echunga : Adelaide Museum.

213. Quartz, cemented with brown iron ore, and containing native gold—Stirling Reef, Echunga : Adelaide Museum.

214. Native gold, in soft brown iron ore—Victoria Mine : Adelaide Museum.

215. Native gold, in soft brown iron ore—Victoria Mine : Adelaide Museum.

216. Native gold, in soft brown iron ore—Victoria Mine : Adelaide Museum.

217. Native gold in silicious brown iron ore—Victoria Mine : Adelaide Museum.

218. Auriferous quartz, surface stone—Mount Pleasant : Adelaide Museum.

219. Auriferous brown iron ore, from surface—Waukaringa : Adelaide Museum.

220. Native gold, in bismuthinite—Balhannah Mine : Adelaide Museum.

221. Native gold, in silicious brown iron ore, with azurite and malachite—Balhannah Mine : Adelaide Museum.

222. Gold, in ferruginous quartz—Balhannah Mine : Adelaide Museum.

223. Auriferous quartz—Lady Alice Mine : Adelaide Museum.

224. Native gold, with bornite and quartz—Lady Alice Mine : Adelaide Museum.

225. Native gold, with bornite and quartz—Lady Alice Mine : Adelaide Museum.

226. Surface stone, composed of gold in ferruginous quartz—South Australia : Adelaide Museum.

227. Auriferous quartz—Union Reef, Northern Territory : Adelaide Museum.

228. Auriferous quartz—Union Reef, Northern Territory : Adelaide Museum.

229. Gold, in ferruginous quartz—Westcott's Reef, Northern Territory : Adelaide Museum.

230. Auriferous quartz—Westcott's Reef, Northern Territory : Adelaide Museum.

231. Auriferous quartz—Sandy Creek, Northern Territory: Adelaide Museum.
232. Gold, in greenstone and quartz—Bismarck Reef, Northern Territory: Adelaide Museum.
233. Ferruginous quartz containing gold—Princess Louise Reef, Northern Territory: Adelaide Museum.
234. Auriferous quartz—Northern Territory Reef, Northern Territory: Adelaide Museum.
235. Auriferous quartz—Northern Territory: Adelaide Museum.
236. Auriferous quartz—Northern Territory: Adelaide Museum.
237. Auriferous quartz—Northern Territory: Adelaide Museum.
238. Auriferous quartz—Northern Territory: Adelaide Museum.
239. Auriferous quartz—Northern Territory: Adelaide Museum.
240. Auriferous quartz—Northern Territory: Adelaide Museum.
241. Gold in quartz, with white clay—Northern Territory: Adelaide Museum.
242. Auriferous quartz—Northern Territory: Adelaide Museum.
243. Auriferous quartz—Hongkong Claim, Northern Territory: Adelaide Museum.
244. Specimens from the Extended Union Claim, Northern Territory, from below water level: Adelaide Museum.
245. Auriferous quartz—New Era Mine, Spring Hill, Northern Territory: Adelaide Museum.
246. Auriferous quartz—Union Reef, Northern Territory: Adelaide Museum.
247. Nugget, weighing 15ozs. 16dwts.—Watt Gully, Gumeracha: South Australian Commission.
248. Nugget, weighing 3ozs. 9dwts. 18grs.—Watt Gully, Gumeracha: South Australian Commission.
249. Specimens of reef gold—Woodside: A. Mitchell.
250. Alluvial gold—Watt Gully, Gumeracha—South Australian Commission.
251. Auriferous quartz—Para Wirra: South Australian Commission.
252. Auriferous ferruginous quartz—Cing Que Reef, Margaret River, Northern Territory: Adelaide Museum.
253. Native gold, in rotten ferruginous quartz—Margaret Claim, Yam Creek, Northern Territory: Adelaide Museum.
254. Native gold, in rotten ferruginous quartz—Margaret Claim, Yam Creek, Northern Territory: Adelaide Museum.
255. Auriferous quartz, with pyrite—Margaret Claim, Yam Creek, Northern Territory: Adelaide Museum.

COPPER MINES OF SOUTH AUSTRALIA.

The specimens comprised in the following collection are intended to illustrate the nature of the ores obtained from the various copper mines in the colony:—

[Burra Burra Mine, situated about 100 miles north of Adelaide.]

256. Copper ore, chiefly cuprite: W. West.
257. Ore composed chiefly of malachite: W. West.
258. Ore composed chiefly of malachite and azurite: W. West.
259. Cuprite and native copper: W. West.
260. Ore composed chiefly of ferruginous cuprite: W. West.
261. Ore composed of cuprite and malachite: W. West.
262. Nodular azurite: W. West.
263. Wad (oxide of manganese), with malachite: W. West.
264. Copper ore, composed of malachite, with wad (oxide of manganese): W. West.
265. Bornite, intermixed with silicious mineral. This specimen represents the class of ore found under the carbonates of copper at the above mine: W. West.

[Balara Mine, situated about 100 miles east of Adelaide.]

- 266. Ore composed of chalcopyrite and crystallized malachite : D. W. Scott.
- 267. Ore composed of chalcopyrite and crystallized malachite : D. W. Scott.
- 268. Ore composed of chalcopyrite and malachite, with quartz : D. W. Scott.
- 269. Chalcopyrite, coated with crystallized malachite : D. W. Scott.
- 270. Ore composed chiefly of copper pyrites : J. B. Austin.

[Wallaroo Mine, Yorke Peninsula.]

The specimens from this mine are arranged to illustrate the mode of occurrence of the various ores in depth ; and at the same time to indicate the petrological character of the "country" or "bed rock" in which the lodes occur. After passing through the superposed recent limestone and clay beds, the "bed-rock," a talcose schist, is met with, and it is in this formation that the copper lodes occur. It will be observed, from examination of the specimens, that the character of this rock gradually changes in depth from a loose talcose schist into a compact silicious rock of considerable hardness. In reference to the ores, it may be noted that near the surface they are generally of the oxydised class, and that they pass gradually into copper pyrites as greater depths are attained. The specimens are arranged in three series : on one side the "bed-rock" ; on the other the minerals found in the lode with the ore, or "vein-stuff" ; and in the centre are the specimens of ore.

- 271. Soil, average thickness about 1ft.
- 272. Concretionary limestone, average thickness about 18in.
- 273. Red clay, average thickness about 4ft.
- 274. Compact limestone, average thickness about 18in.
- 275. Top of "bed rock," talcose schist, in a very friable condition.
- 276. Cap of lode.
- 277. Rock from a depth of five fathoms.
- 278. Ore from a depth of five fathoms ; consists chiefly of atacamite, partially converted into green carbonate of copper, together with a little red oxide ; contains about 45 per cent. copper.
- 279. Atacamite : J. B. Austin.
- 280. Vein-stuff from a depth of ten fathoms.
- 281. Rock, from a depth of ten fathoms.
- 282. Ore, from a depth of ten fathoms. This specimen is chiefly composed of ferruginous red oxide of copper, with some finely intermixed silicia ; contains about 30 per cent. copper.
- 283. Ore, from a depth of ten fathoms, composed chiefly of grey sulphide of copper ; contains about 30 per cent. copper.
- 284. Vein-stuff, from a depth of ten fathoms.
- 285. Ore, from a depth of sixteen fathoms, composed chiefly of grey sulphide of copper ; contains about 75 per cent. copper.
- 285A. Native copper ; contains about 88 per cent. pure copper.
- 286. Ore, consisting chiefly of red oxide, with intermingled native copper ; contains about 60 per cent. copper.
- 287. Ore, consisting chiefly of red oxide, with intermingled native copper ; contains about 63 per cent. copper.
- 288. Native copper ; J. B. Austin.
- 289. Rock, from a depth of twenty fathoms.
- 290. Ore, from a depth of twenty fathoms ; copper glance (grey sulphide of copper) ; contains about 77 per cent. copper.
- 291. Ore, from a depth of twenty fathoms ; yellow copper ore, chiefly composed of copper pyrites ; contains about twenty per cent. copper. At the Wallaroo Mines this class of ore always contains iron pyrites in combination with the copper pyrites.
- 292. Vein-stuff, from a depth of twenty fathoms.
- 293. Rock, from a depth of thirty fathoms.
- 294. Ore, from a depth of thirty fathoms ; contains about 20 per cent. copper.

295. Vein-stuff from a depth of thirty fathoms.
 295a. Rock, from a depth of forty fathoms.
 296. Ore, from a depth of forty fathoms; contains about 16 per cent. copper.
 297. Ore, from a depth of forty fathoms; yellow copper ore with quartz; contains about 14 per cent. copper.
 298. Vein-stuff, from a depth of forty fathoms.
 299. Rock, from a depth of fifty fathoms.
 300. Ore, from a depth of fifty fathoms; contains about 15 per cent. copper.
 301. Ore from a depth of fifty fathoms; contains about 16 per cent. copper.
 302. Vein-stuff, from a depth of fifty fathoms.
 303. Rock, from a depth of sixty fathoms.
 304. Ore, from a depth of sixty fathoms; contains about 22 per cent. copper.
 305. Ore, from a depth of sixty fathoms; contains about 20 per cent. copper.
 306. Vein-stuff, from a depth of sixty fathoms.
 307. Rock, from a depth of seventy fathoms.
 308. Ore, from a depth of seventy fathoms; yellow copper ore, with quartz; contains about 16 per cent. copper.
 309. Vein-stuff, from a depth of seventy fathoms.
 310. Rock, from a depth of eighty fathoms.
 311. Ore, from a depth of eighty fathoms; contains about 15 per cent. copper.
 312. Ore, from a depth of eighty fathoms; contains about 17 per cent. copper.
 313. Vein-stuff from a depth of eighty fathoms.
 314. Rock, from a depth of ninety fathoms.
 315. Ore, from a depth of ninety fathoms; contains about 14 per cent. copper.
 316. Vein-stuff, from a depth of ninety fathoms.
 317. Rock, from a depth of one hundred fathoms.
 318. Ore, from a depth of one hundred fathoms; contains about 17 per cent. copper.
 319. Ore, from a depth of one hundred fathoms; contains about 24 per cent. copper.
 320. Vein-stuff, from a depth of one hundred fathoms.
 321. Rock, from a depth of one hundred and ten fathoms.
 322. Ore, from a depth of one hundred and ten fathoms; contains about 18 per cent. copper.
 323. Ore, from a depth of one hundred and ten fathoms; contains about 14 per cent. copper.
 324. Vein-stuff, from a depth of one hundred and ten fathoms.
 325. Rock, from a depth of one hundred and twenty fathoms.
 326. Ore, from a depth of one hundred and twenty fathoms; yellow copper ore, with quartz; contains about 15 per cent. copper.
 327. Ore, from a depth of one hundred and twenty fathoms; yellow copper ore, with quartz, &c.; contains about 10 per cent. copper.
 328. Vein-stuff, from a depth of one hundred and twenty fathoms.
 329. Zinc-blende, with calcite (carbonate of lime), from a depth of one hundred and twenty-five fathoms.
 330. Zinc-blende, with yellow copper ore and calcite, from a depth of one hundred and twenty-five fathoms. This mineral, viz., zinc-blende, is of very rare occurrence at this mine.
 331. Rock, from a depth of one hundred and thirty fathoms.
 332. Ore, from a depth of one hundred and thirty fathoms; contains about 12 per cent. copper.
 333. Vein-stuff from a depth of one hundred and thirty fathoms.
 334. Rock, from a depth of one hundred and forty fathoms.
 335. Ore, from a depth of one hundred and forty fathoms; contains about 17 per cent. copper.
 336. Vein-stuff, from a depth of one hundred and forty fathoms.

- 337. Rock, from a depth of one hundred and fifty fathoms.
- 338. Ore, from a depth of one hundred and fifty fathoms; contains about 12 per cent. copper.
- 339. Ore, from a depth of one hundred and fifty fathoms; yellow copper ore with intermixed black talc; contains about 10 per cent. copper.
- 340. Vein-stuff, from a depth of one hundred and fifty fathoms.
- 341. Iron pyrites (mundic) found in various parts of the mines.
- 342. Partially decomposed iron pyrites from upper part of a lode.
- 343. Galena, with a little yellow copper ore.
- 344. Galena (sulphide of lead).
- 345. Galena, with a little yellow copper ore.

A small vein of this mineral runs parallel with one of the copper lodes.

This mine is now down to one hundred and ninety-two fathoms, but the character of the ore, country, &c., does not materially differ from that exhibited at one hundred and fifty fathoms. With a few exceptions, the above-mentioned specimens are contributed by the manager, H. R. Hancock, Esq., on behalf of the proprietors of the Wallaroo Mines.

[Moonta Mine, situated about twelve miles south of the Wallaroo Mine.]

The character of the ore deposits is very similar to that of the Wallaroo. The chief points of difference are that the country is here a very hard and compact feldspathic rock, and that the ores are richer in copper, the grey sulphide and purple copper ore occurring in larger quantities than at the Wallaroo end of the district.

- 346. Soil, average thickness about 8in.
- 347. Concretionary limestone, average thickness about 2-3ft.
- 348. Compact limestone, average thickness about 2ft.
- 349. Concretionary limestone, average thickness about 18in.
- 350. Red clay, average thickness about 3ft.
- 351. Limestone rock, locally called "conglomerate," average thickness about 9in.
- 352. Bedrock.
- 353. Gossan—orey matter very much decomposed, from the top of the lode.
- 354. Ore, from a depth of six fathoms, composed of atacamite, with a little red oxide; contains about 40 per cent. copper.
- 355. Ore, chiefly composed of grey sulphide of copper with native copper, from a depth of ten fathoms; contains about 80 per cent. copper.
- 356. Native copper; contains about 90 per cent. copper.
- 357. Vein-stuff, from a depth of ten fathoms.
- 358. Black sulphide of copper.
- 359. Black sulphide of copper.
- 360. Copper glance (grey sulphide of copper), from a depth of fifteen fathoms; contains about 70 per cent. copper.
- 361. Bornite (purple copper ore), from a depth of fifty-five fathoms; contains about 50 per cent. of copper.
- 362. Ore, from a depth of seventy-five fathoms, copper pyrites with bornite; contains about 34 per cent. copper.
- 363. Vein-stuff, associated with bornite.
- 364. Vein-stuff, quartz with bornite.
- 365. Ore, close-grained, massive chalcopyrite, from a depth of ninety fathoms; contains about 32 per cent. copper.
- 366. Ore, massive chalcopyrite, from a depth of ninety fathoms; contains about 32 per cent. copper.
- 367. Massive chalcopyrite, var. peacock ore, found associated with the ordinary yellow ore; contains about 32 per cent. copper.
- 368. Massive chalcopyrite, associated with quartz, from a depth of one hundred and forty-five fathoms.
- 369. Chalcopyrite, var. peacock ore, associated with quartz.

370. Vein-stuff, from a depth of one hundred and sixty fathoms.

371. Vein-stuff, composed of feldspathic rock, quartz, and yellow ore.

372. Vein-stuff, from a depth of one hundred and eighty fathoms.

373. Vein-stuff, from a depth of one hundred and ninety fathoms, composed of feldspathic rock and yellow ore.

Note.—This mine is now worked down to a depth of 240 fathoms, but there is no material change in the character of the lode, &c., from that which is indicated above. The above-named specimens are contributed by the Manager, H. R. Hancock, Esq., on behalf of the Moonta Mines Proprietors, Limited.

[Various Northern Mines, *i.e.*, mines situated in the country north and north-east of Port Augusta.]

374. Copper ore, composed of red oxide and silicate of copper—Mount Coffin : D. W. Scott.

375. Ore, composed of red oxide, with intermixed malachite—Mount Coffin : D. W. Scott.

376. Ore, composed chiefly of copper glance—Mount Coffin : D. W. Scott.

377. Blue and green carbonate of copper, with earthy red oxide—Yudanamutana Mine : J. B. Austin.

378. Ferruginous red oxide of copper, with malachite—Yudanamutana Mine : J. B. Austin.

379. Massive cuprite, with a little atacamite—Blinman Mine : J. B. Austin.

380. Massive ferruginous cuprite, with intermixed chalcopyrite, &c.—Near Blinman Mine : J. B. Austin.

381. Chrysocolla, on black oxide of copper—Nuccaleena Mine : J. B. Austin.

382. Massive cuprite, partly coated with malachite—Nuccaleena Mine : J. B. Austin.

383. Ore, composed of cuprite and atacamite—From near Woltana : Government Geologist.

384. Ore, composed chiefly of copper glance with malachite—From near Woltana : Adelaide Museum.

385. Ore, composed chiefly of earthy red oxide—Copperfield Creek, Northern Territory : Adelaide Museum.

181 The Moonta Copper Mines are situated at the northern portion of Yorke Peninsula. The specimens from these mines represent the principal descriptions of copper ores, and also the geological character of the district. Near the surface recent limestone and clay deposits are found; but the bedrock, in which the lodes occur, is felsite porphyry of a very hard and compact nature. The secondary series of rocks are entirely absent. The richer ores are only met with at comparatively shallow depths, with the exception of bornite—rich purple sulphide—which is occasionally found at the deepest parts of the mines yet explored. The bulk of the produce obtained consists of chalcopyrite, a large proportion of which is found in connection with quartz or other gangue, and which is extracted and brought up to an average of 20 per cent. of copper by means of crushing and jigging machinery. This kind of veinstone is represented by Nos. 23 and 45. The various specimens are arranged to show as nearly as possible the order in which they occur from the surface downwards.

1. Soil, varying in thickness from 6 inches to 1 foot.

2. Concretionary limestone, from 6 inches to 2 feet in thickness.

3. Compact limestone, average thickness about 2 feet.

4. Concretionary limestone (second layer), from 1 to 2 feet in thickness.

5. Red clay, varying from a few inches to 8 feet in thickness; frequently about 3 feet.

6. Compact limestone, locally termed conglomerate or cement, from a few inches to 2 feet in thickness.

7. Gossan, from the top of the lode.

8. Kaolin, sometimes found near the cap of the deposit of ore at a depth of from 30 to 40 feet.

9. Oxychloride of copper from the depth of 30 feet. Estimated at 45 per cent. of copper.
 10. Native copper, nearly pure.
 11. Native copper, associated with rich ore.
 12. Crystallized cuprite, found at the depth of about 72 feet in a few places in the mine, where cross courses intersect the lode.
 13. Black sulphide of copper from the depth of 60 feet. Estimated at 50 per cent. of copper.
 14. Copper glance. Estimated at 75 per cent. of copper.
 15. Bornite (purple sulphide of copper). Estimated at 60 per cent. of copper.
 16. Chalcopyrite (peacock ore) from the depth of 330 feet. Estimated at 26 per cent. of copper.
 17. Bornite and chalcopyrite from 150 feet deep. Estimated at 48 per cent. of copper.
 18. Chalcopyrite and bornite from the depth of 510 feet. Estimated at 35 per cent. of copper.
 19. Chalcopyrite (peacock ore). Estimated at 28 per cent. of copper.
 20. Chalcopyrite. Estimated at 28 per cent. of copper.
 21. Chalcopyrite from the depth of 690 feet. Estimated at 30 per cent. of copper.
 22. Chalcopyrite from the depth of 1,320ft. Estimated at 24 per cent. of copper.
 23. Quartz and copper ore. These specimens, with those numbered 45, represent the bulk of the veinstone obtained in the mine.
 24. Rock with copper ore.
 25. Bedrock felsite porphyry, from alongside the lode at the depth of 90ft.
 26. Bedrock from the depth of 270ft.
 27. Bedrock from the depth of 510ft.
 28. Bedrock from the depth of 840ft.
 29. Bedrock from the depth of 1,110ft.
 30. Crystallized quartz and chalcopyrite from the depth of 690ft.
 31. Crystallized atacamite; rarely met with.
- The above lot represents the various kinds of ores found throughout the mine.
- The following is a list of larger specimens, further illustrating the various kinds of veinstone :—
32. Oxychloride of copper from the depth of 90ft. Estimated at 45 per cent. of copper.
 33. Rich ore, associated with native copper.
 34. Black sulphide of copper from the depth of 60ft. Estimated at 50 per cent. of copper.
 35. Copper glance (grey sulphide of copper). Estimated at 70 per cent. of copper.
 36. Chalcopyrite and bornite from the depth of 390ft. Estimated at 35 per cent. of copper.
 37. Chalcopyrite (peacock ore) from the depth of 450ft. Estimated at 28 per cent. of copper.
 38. Chalcopyrite and a little bornite from the depth of 540ft. Estimated at 32 per cent. of copper.
 39. Bornite (purple sulphide of copper). Estimated to contain 60 per cent. of copper.
 40. Bornite, with a little chalcopyrite. Estimated at 55 per cent. of copper.
 41. Chalcopyrite and iron pyrites. Estimated at 16 per cent. of copper.
 42. Bornite and chalcopyrite, with a little quartz, from the depth of 1,140ft. Estimated at 40 per cent. of copper.
 43. Chalcopyrite, with a little bornite and quartz, from the depth of 1,140ft.
 44. Bornite, chalcopyrite, and quartz, from the depth of 1,320ft. Estimated to contain 40 per cent. of copper.

45. Copper ore in combination with gangue. These specimens, with those numbered 23, represent the bulk of the veinstone obtained in the mines.

46. Diamond-drill cores.

182 The Wallaroo Copper Mines, Yorke's Peninsula—Specimens illustrative of the mineralogical and geological features of the district. The formation below the alluvial soil is composed of recent limestone and clay, underneath which the bedrock, a non-fossiliferous talcose schist, is met with. The lodes exist in the older formation, and are sometimes discovered by costeening to the depth of the recent overlying deposits. The ores near the cap of the lode are generally of the oxidised class, and they pass gradually into chalcopryite, as greater depths are attained. The lodes project above the bedrock into the calcareous deposits, but do not form an outcrop above the surface of the ground.

1. Soil, average thickness about 1 foot.
2. Concretionary limestone, average thickness about 18 inches.
3. Compact limestone, average thickness about 18 inches.
4. Concretionary limestone, second layer; average thickness 15 inches.
5. Red clay, varying in thickness from 2 feet to 8 feet.
6. Talcose schist in a friable condition; top of bedrock.
7. Gossan, from the "cap of lode."
8. Oxychloride of copper. Estimated to contain 20 per cent. of copper.
9. Carbonate of copper. Estimated at 15 per cent. of copper.
10. Ore from the depth of 120 feet, consisting of oxychloride, cuprite, black ore, native copper, and gossan. Estimated at 45 per cent. of copper.
11. Black sulphide of copper and iron pyrites from the depth of 120 feet.
12. Peacock ore, consisting of copper and iron pyrites.
13. Chalcopryite from the depth of 180 feet. Estimated at 18 per cent. of copper.
14. Chalcopryite from the depth of 240 feet. Estimated at 10 per cent. of copper.
15. Chalcopryite and iron pyrites from the depth of 420 feet. Estimated to contain 20 per cent. of copper.
16. Chalcopryite from the depth of 600 feet. Estimated at 30 per cent. of copper.
17. Chalcopryite from the depth of 780 feet.
18. Chalcopryites. Estimated at 12 per cent. of copper.
19. Copper ore in combination with gangue.
20. Bedrock (talcose schist) from alongside the lode at a depth of 39 feet.
21. Bedrock from the depth of 60 feet.
22. Bedrock from the depth of 120 feet.
23. Bedrock from the depth of 180 feet.
24. Bedrock from the depth of 780 feet.
25. Bedrock from the depth of 840 feet.
26. Cuprite and oxychloride of copper, associated with iron ore, from the depth of 60 feet. Estimated to contain 40 per cent. of copper; from Kurilla.
27. Cuprite and oxychloride of copper, associated with iron ore, from the depth of 120 feet. Estimated to contain 40 per cent. of copper; from Kurilla.
28. Chalcopryite, with a little iron pyrites, from the depth of 420 feet. Estimated to contain 22 per cent. of copper.
29. Chalcopryite from the depth of 480 feet. Estimated to contain 24 per cent. of copper; from Kurilla.
30. Chalcopryite from the depth of 600 feet. Estimated at 28 per cent. of copper.
31. Chalcopryite from the depth of 840 feet. Estimated to contain 12 per cent. of copper.
32. Chalcopryite from the depth of 840 feet. Estimated to contain 12 per cent. of copper.
33. Chalcopryite from the depth of 840 feet. Estimated to contain 10 per cent. of copper.

34. Chalcopyrite from the depth of 930 feet. Estimated to contain 10 per cent. of copper
35. Copper ore in combination with gangue.
36. Copper ore in combination with gangue, from Kurilla.
37. Diamond-drill cores.
- 183 Captain Cowling—Specimens of copper ore from Hamley Mine, Yorke Peninsula.
- 184 Wm. Patrick—Specimens of copper ore from Hillside Mine, Kapunda
- 185 R. S. Crabb—Specimen of malachite from Burra Mine.
- 186 D. W. Scott—Specimens of copper ore from Adelaide Mine, 12 miles N.E. by E. from Adelaide.
- 187 Wallaroo Smelting Company—Trophy of copper ingots.
- 188 W. E. Pascoe—Rock crystal from Davey's Claim, Teetulpa.
- 189 Sir S. Davenport, K.C.M.G.—Blocks of iron ore from Carcoona, west of Port Augusta.
- 190 Hy. Kempson, Teatree Gully—Soapstone.
- 191 M. Laycock, Waymouth-street—Two slabs of soapstone from Gumeracha.
- 191 Capt. F. Prout—Two slabs of soapstone from Gumeracha.
- 192 James Hawke, Teatree Gully—Sand, 4 varieties.
- 193 James Marshall & Co., Rundle-street—Cone of silver-lead ores from Wheel Margaret Mine, near Mount Barker.
- 194 G. F. Hancock—Specimens of silver-lead ore from Almanda Mine, 18 miles south-east of Adelaide.
- 195 Arthur Hardy—Specimens of silver-lead ore from Glen Osmond Quarry Silver-lead Mine, 4 miles from Adelaide.
- 196 Dr. Stephens—Specimens of silver-lead ore from Eukaby, 48 miles east of Hawker railway station.
- 197 W. L. Dalwood—Specimens of asbestos from Arkaba, near Hawker. Shown in natural state and as disintegrated by application of water.
- 198 J. Leaver, Rundle and King William streets—Hats, sunshades, pullovers, military hats and caps, collegiate caps, &c.
- 199 G. & W. Shierlaw, Hindley-street, Adelaide—Men's and boys' clothing, hats, shirts, &c.
- 200 T. A. Westwood, 64, Rundle-street, Adelaide—Ladies' and children's outfits.
- 201 Lobethal Tweed Factory, D. Robin, Sec., Gawler-place, Adelaide—Tweeds, flannels, wools, &c., made at the factory, Lobethal.
- 202 B. S. Rothe, Sedan—Collection of insects, numbering 2,000, and comprised of 700 different species, of which part was collected by Mr. T. Heuzenroder, of Tanunda.
- 203 F. Brookes, Finnis-street, Lower North Adelaide—Venetian blinds.
- 204 G. P. Doolette & Co., King William-street, Adelaide—Large assortment of gentlemen's shirts.
- 205 H. J. Bailey & Co., Rundle-street, Adelaide—
 - 1 Children's fancy and embroidered dresses.
 - 2 Ladies' evening costumes.
- 206 A. Simpson & Son, Gawler-place, Adelaide—Burglar and fire-proof safe, lent to Govt. Geologist for protection of exhibits.
- 207 D. Tregillas, Belair—Specimens of malachite.
- 208 Conservator of Water (J. W. Jones), Govt. Offices, Adelaide—Well-boring appliances, models of boring machines and diamond drills, samples of strata from bores undertaken: Milendilla bore, 231ft.; Tintinarra bore, 253ft., artesian water, 4,300 gallons per day; Roberts' Well, Nullabor Plains, 777ft.; Cold-and-Wet bore, 830ft., abandoned; Mungamurtiemurtie bore, 272ft., 52,800 gallons per day; Hergott, No. 2, 350ft., 100,000 gallons per day; Strangways, 365ft., 1,200,000 gallons per day; Cowards, 308ft., 1,200,000 gallons per day.

- 209 **G. E. Fulton & Co., Kilkenny**—Verandah castings, centre-pieces for rooms, gateways and palisading, cast-iron baths, staircases, and garden seats, &c.
- 210 **J. P. Everett, Rundle-street, Adelaide**—Gentlemen's and ladies' beaver hats, military cockades and caps, servants' livery hats, &c.
- 211 **Geo. Walker, Birkenhead**—Oil painting of McLaren Wharf, Port Adelaide.
- 212 **F. H. Schlork & Co., Gawler-place, Adelaide**—Samples of dyed wools, feathers, and cloth.
- 213 **Miss Margaret Kelly, Etterick Farm, Riverton**—Silk patchwork quilt.
- 214 **Mrs. A. Adamson, College Park**—Tea cosy, and other articles made from the feathers of birds frequenting the River Murray.
- 215 **A. Dowie, Rundle-street, Adelaide**—Boots and shoes of all descriptions.
- 216 **A. Dowie, Bowden Tannery, Bowden**—Sides of sole leather, split kip, waxed calf, waxed kip, wallaby, waxed kangaroo, harness back, bridle, &c.
- 217 **The Adelaide Boot Factory, Waymouth-street, Adelaide**—Boots and shoes of various descriptions.
- 218 **J. J. Green & Son, Hindley-street, Adelaide**—Leather, boot and shoe uppers, grindery, &c.
- 219 **J. Brunell, Semaphore-road, Exeter**—Embossed glass showcase, showing specimens of graining, etching, painting, and house decorations.
- 220 **H. L. Voss, Rundle-street, Adelaide**—A splendid exhibit, representing on one side a front door of a mansion with raised panels, grained in bastard pollard, the stiles and rails in Spanish walnut, relieved in plain oak mouldings and ebony chamfers. The fan and side lights of polished plate, embossed with elaborate scroll patterns. The west side represents the interior of hall door, neatly decorated, having in the panels and fanlight embossed plateglass of another process.
- 221 **Hammer & Co., Rundle-street, Adelaide**—Photographs, cabinet and panel, and painted photographs.
- 222 **"Kapunda Herald"**—Reading stand.
- 223 **Surveyor-General's Departments**—Statistical map and enquiry office for supplying information relative to land regulations, &c.
- 224 **"Advertiser," "Express," and "Chronicle"**—Enquiry office, with daily papers for free use of the public.
- 225 **E. F. Troy, Freeman-street, Adelaide**—Specimens of graining and marbling for house decorations.
- 226 **F. E. Krichauff, Government Offices, Victoria-square, Adelaide**—Amateur photographs of colonial scenery.
- 227 **Wm. Carruthers, Melbourne-street**—Wallaroo Bay and Smelting Works (Loan—Artist not known.)

FINE ARTS, ETC.

(In the Main Building.—Western Court.)

- 4 CAWTHORNE & Co.—Hand-painted plaques, poonah painting, &c.
- 15 MISS L. FIELD, AND OTHER LADIES — Decorations, Australian Flora,
on walls.
- 15A MISS E. F. BROAD—Hand-painted mirror, bird and water-lilies.
- 32 OLD COLONISTS' COURT—Various oil paintings and water-color drawings,
- 39 J. W. BARNES — Plaster cast, Tribute to Apollo, vase, pedestal,
drawings, &c.
- 40 F. N. BIRCHELL (DEPARTMENT OF THE CONSERVATOR OF WATER),
PUBLIC OFFICER—System of Canalisation and Irrigation, adapted to
the River Murray and the lands contiguous thereto.

SKETCHES IN BLACK AND WHITE.

(In the Concert Hall.)

W. B. FERNLEY, MARY-STREET, UNLEY—

- 1 Horse. (Loan.)
- 2 Group of Horses. (Loan.)

A. SCOTT BROAD, HANSON-STREET, ADELAIDE—

- 3 A Gippsland Back Track.
- 4 Gorge in the Valley of the Sturt.
- 5 T. ADOCK, PORT-ROAD, HINDMARSH—Portrait of the late Dean Russell.
- 6 T. C. DALWOOD, HALIFAX-STREET, ADELAIDE — Portrait of the Right
Worshipful the Mayor of Adelaide (Mr. E. T. Smith).
- 7 MISS E. BAILEY, COMMERCIAL-ROAD, PORT—Bavaria.

MRS. RANDALL, STRANGWAYS-TERRACE—

- 8 Group of trees (loan).
- 9 Copy portrait of Mozart (loan).

(In the Art Gallery.)

A. SAUPE, MODELLER, NELSON-STREET, STEPNEY—

- 116 Bust of Sir Samuel Davenport, K.C.M.G., LL.D., modelled from life.
- 117 Bust of E. T. Smith, Esq., M.P.

HENRY CLAYTON, ARTIST TO HIS EXCELLENCY THE GOVERNOR—

- 118 Portrait of Sir Samuel Davenport, K.C.M.G., painted full length in oils.
- 118A Portrait of Sir W. C. F. Robinson, G.C.M.G.

A. MACCORMAC, BARTON-TERRACE—

- 119 Portrait of Sir Geo. Kingston, late speaker of the House of Assembly, S.A.
- 120 Portrait of Sir R. B. Torrens, G.C.M.G.
- 121 H. P. GILL, principal—Collection of exhibits by artists and students of
the School of Design.

(In the Eastern Annexe.)

- 227 WM. CARRUTHERS (Loan), ARTIST NOT KNOWN—Wallaroo Bay and
Smelting Works.
- 211 GEO. WALKER, BIRKENHEAD—View of Port Adelaide.

(In the Main Building, Eastern Court.)

- 68 J. HOOD—Oil painting of church.

OIL PAINTINGS.

(In the Concert Hall.)

- 1 GEORGE R. W. BOURNE, SEMAPHORE—Rescue of the Crew of the *Eblana* by the Crew of the *Decapolis* during a Gale in the Bay of Biscay.
- 2 CHAS. HILL, SOUTH-TERRACE, ADELAIDE—Georgetown, S.A., in 1876.
- 3 ALF. SCOTT BROAD, HANSON-STREET, ADELAIDE—Duck-shooting on the Murray.
- 4 E. GOLDSMITH—Shipping on the Port River.
- 5 J. SHAKESPEARE, CARRINGTON-STREET—The Girl at the Brook.
- 6 JOHN WHITE, RUNDLE-STREET, KENT TOWN—Witchelena, S.A.
- 7 G. W. BISCHOFF, GAWLER—The Old Shepherd.
- A. MACCORMAC, BARTON-TERRACE—
- 8 Portrait of Hon. A. B. Murray.
- 9 A Bushman.
- 10 The Rock: near Morialta.
- 11 JAS. SHAKESPEARE, CARRINGTON-STREET—Scene in Hyde Park.
- 12 MISS FIVEASH, NORTH ADELAIDE—A Study of Fruit, in oil.
- 13 J. IRVING, 117, RUNDLE-STREET, ADELAIDE—Knocked up.
- 14 CHAS. HILL, SOUTH-TERRACE, ADELAIDE—The Plains of Gulnare.
- 15 J. SHAKESPEARE, CARRINGTON-STREET—A Bend on the Acrow, Vic.
- 16 CHAS. HILL, SOUTH-TERRACE, ADELAIDE—Portrait of Sir R. R. Torrens.
- 17 H. CLAYTON (ARTIST TO HIS EXCELLENCY SIR W. C. F. ROBINSON, G.C.M.G.), 1, ALBERT-TERRACE, CARRINGTON-STREET—Portrait of A. Abrahams.
- 17A WILLIAM CARRUTHERS, MELBOURNE-STREET, N.A.—Two stags' heads (loan).
- 18 JOHN WHITE, RUNDLE-STREET, KENT TOWN—View of Mount Lofty from the Torrens.
- 19 LOUIS TANNERT, SOUTH AUSTRALIAN INSTITUTE—Good Friends.
- 20 MRS. MILLER, BRAUMONT—Morning Scene on the Onkaparinga.
- 21 MISS ANN E. BILLIATT, GOVERNMENT COTTAGE, GLENELG—View on Onkaparinga River.
- 22 J. ASHTON, TOWN HALL, NORWOOD—The Avenue.
- 23 L. TANNERT—The Roses.
- 24 G. W. BISCHOFF, GAWLER—Battle Scene: Back from the Valley of Death.
- 25 MISS EMILY ANSON, PENNY-STREET, EXETER—View near Unley Park.
- 26 MRS. R. K. SMART, NORWOOD—Hawk Rending its Prey.
- 27 H. CLAYTON, ARTIST TO HIS EXCELLENCY SIR W. C. F. ROBINSON, G.C.M.G., ALBERT-TERRACE, CARRINGTON-STREET—View on New Zealand Coast.
- 28 R. H. SHAW, HANSON-PLACE—Blacks preparing for a Corroboree. See Armament Hall.
- 29 H. CLAYTON, ARTIST TO HIS EXCELLENCY SIR W. C. F. ROBINSON, G.C.M.G., ALBERT-TERRACE, CARRINGTON-STREET—The Dell, Botanic Gardens.
- 30 J. ASHTON, TOWN HALL, NORWOOD—In the Sweetness of an Autumn Day.
- 31 MISS ANNIE M. BENHAM, NORTH ADELAIDE—Flower in Vase.
- 32 MRS. K. ST. B. MILLER, UPPER KENSINGTON—Evening Scene on the Onkaparinga.
- 33 MISS EMILY ANSON, PENNY-STREET, EXETER—View on the Murray.
- 34 MISS ANNIE M. BENHAM, NORTH ADELAIDE—Flowers in a Mug.
- 35 MISS SARAH A. RAGLESS, ENFIELD—The Old Farm House (copy).

- 36 J. A. UPTON—Portrait of Chas. Todd, Esq., M.A., C.M.G.
 37 Miss A. RAGLESS, ENFIELD—View of the Mount Wells, near Farina.
 40 Miss A. BENHAM, NORTH ADELAIDE—Two Kingfishers (laughing
 jackass) in Tree.
 41 J. JOHNSTON, GORDON-ROAD, PROSPECT HILL—The Smugglers' Retreat
 on the Scottish Coast.
 42 J. ASHTON, TOWN HALL, NORWOOD—Old Age: a Beech Tree.
 44 H. CLAYTON, ARTIST TO HIS EXCELLENCY SIR W. C. F. ROBINSON,
 G.U.M.G.—Portrait of Sir Henry Loch.
 45 W. FERNELEY, MARY-STREET, UNLEY—(Loan)—Racehorse.
 G. WILLIAMS, 25, LEFEVRE-TERRACE, NORTH ADELAIDE—(Loan)—
 47 Portrait, Old Lady, after Rembrandt.
 48 } Specimens of the art of inlaying marble, portrait of a man, portrait of
 49 } a woman.
 50 GEORGE WILLIAMS, LEFEVRE-TERRACE, N.A.—Portrait old man, after
 Rembrandt.
 51 LOAN BY S. BROWN, ESQ., N. ADELAIDE—Two Musicians.
 52 JOHN PETTIE, LENT BY REV. A. HONNER, WOODFORDE, MAGILL—
 The Prisoner's Pet.
 53 F. BENDA, COPY FROM OLD MASTER (Loan)—The Card Players.
 55 J. ASHTON, PARADE, NORWOOD—Cleaning up after a Storm, off Glenelg
 56 Miss ELISE TURCK (Loan)—The White Plume.
 57 ARTIST UNKNOWN (LOAN BY MR. A. SIMS, SUSSEX-STREET, GLENELG)
 —Love and Harmony, supposed to be 200 years old.
 59 L. DROIT (LOAN BY MR. A. SIMS)—The Cottage Maid.
 67 Miss E. F. BROAD, KING WILLIAM-ROAD, UNLEY—Cards, Christmas,
 Easter, and Birthday, hand painted.
 68 M. E. DREWITT—Garden Reach, Brisbane.
 71 E. GOLDSMITH—Morning Scene on the Onkaparinga.
 81 CHAS. HILL, SOUTH-TERRACE, ADELAIDE—Reading the Proclamation
 of the Colony of South Australia, 1837.
 101 Miss E. TURCK (Loan)—Old Letters.
 102 JAS. BRUNELL, EXETER, SEMAPHORE—Illuminated picture, Under the
 Greenwood.
 103 J. A. UPTON—Portrait of G. W. Goyder, Esq., Surveyor-General.
 104 Miss E. BAILEY, COMMERCIAL-ROAD, PORT ADELAIDE—Penmaenpool
 Ferry.
 EXECUTORS LATE F. C. SINGLETON (Loan)—
 105 Portrait of a Lady, by Vanderback.
 106 Entrance to Dunedin Harbor, by John Gipp, N.Z.
 107 Miss E. RAKE, ENFIELD—Oil painting on satin, &c.
 108 Miss S. A. RAGLESS, ENFIELD—Oil painting on satin.
 Miss HILFERS, GAWLER—
 109 Simply to Thy Cross I Cling (loan).
 110 English Winter Scene (loan).
 111 Swiss Scene (loan).
 112 Yacht in full sail (loan).
 Miss BILLIATT, GLENELG—
 113 { On the Onkaparinga (loan).
 { Moonlight (loan).
 115 to 122 Miss HILFERS, GAWLER—Painted plaques, various subjects (not
 for competition).
 123 W. PHILLIPS, PORT ADELAIDE—Welsh Valley (loan).
 Mrs. RANDALL, STRANGWAYS-TERRACE, N.A.—
 124 St. Bernard Dogs (painted on silk).
 125 Officer's Farewell do.

ROBBIE, WILLIAM, MOUNT GAMBIER—

126 Blue Lake, Mount Gambier.

127 Leg of Mutton and Valley Lake, Mount Gambier.

WATER-COLOR DRAWINGS.

(In the Concert Hall.)

A. ESAM, PRINCE ALFRED HOTEL, ADELAIDE—

38 The Gold Escort—Troopers escorting Cobb's coach.

39 One of Cobb's Coaches changing Horses.

43 W. K. GOLD, 25, LEFEVRE-TERRACE, N.A. — The *Sunbeam*, Lord Brassey's yacht.

46 MRS. WALCOT—Fish caught at Kangaroo Island.

Miss E. TURCK (LOAN)—

54 The Lover, from Shakespeare's "As you like it."

58 Nydia, from "The last days of Pompeii."

62 W. K. GOLD, 25, LEFEVRE-TERRACE, N.A. — Obelisk erected on Stamford Point, Port Lincoln, in memory of Capt. Flinders, R.N.

63, 64 REV. A. SELLS, MITCHAM—Sketches in South Australia.

65 W. K. GOLD, 25, LEFEVRE-TERRACE, N.A. — Panorama of Adelaide Hills.

66 H. CLAYTON (ARTIST TO HIS EXCELLENCY THE GOVERNOR, &c.)—The Bride.

69 REV. A. SELLS, MITCHAM—Sketches in South Australia.

70 E. GOLDSMITH—King William-street, Adelaide.

72 REV. A. SELLS, MITCHAM—Sketches in South Australia.

73 THOMAS ADCOCK, PORT-ROAD, HINDMARSH — Listening to a Tale.

74 A. SCOTT BROAD, HANSON-STREET, ADELAIDE—View near Burnside.

75 A. J. MURRAY, MORIALTA CHAMBERS — Sketches of Port Lincoln and Normanville.

76 E. GOLDSMITH—View of Adelaide.

77 W. K. GOLD, 25, LEFEVRE-TERRACE — Glenelg in Winter—Coast View.

79 JOHN GOW, 53, LEFEVRE-TERRACE, N.A.—Landscape at Gumeracha.

81 A. ESAM, PRINCE ALFRED HOTEL, ADELAIDE—One of Cobb's coaches crossing a flooded creek.

82 MRS. WIDGERY (Loan), MAGILL-ROAD — Basket of flowers.

A. SCOTT BROAD, HANSON-STREET, ADELAIDE—

83 Coast view near Mordialloc.

84 Bates' Hut, Kangaroo Island.

A. J. MURRAY, MORIALTA CHAMBERS—

85 Coast view near Normanville.

86 Do. do.

JOHN GOW, 53, LEFEVRE-TERRACE, N.A.—

87 View of Brighton Beach, Victoria.

88 Do. do.

89 South Australian Bank.

90 Onkaparinga River.

91 A. SCOTT BROAD, HANSON-STREET, ADELAIDE—A Nook in Waterfall Gully.

92 A. ESAM, PRINCE ALFRED HOTEL, ADELAIDE—Designs for Christmas Cards.

93, 94 HENDERSON & MARRYAT, KING WILLIAM-STREET, ADELAIDE—Cottages.

- A. SCOTT BROAD, HANSON-STREET, ADELAIDE—
 95 The Haunt of the Dingo.
 96 Her last Harbor.
 97 On the Patawalonga Creek.
 98 W. AUSTIN—Arrival of the First Gold Escort.
 99 E. GOLDSMITH—Rundle-street, Adelaide, looking west.
 100 MISS E. TURCK—Lucia, in the Bride of Lammermoor.
 105 MISS E. BAILEY, COMMERCIAL-ROAD, PORT—At Sunset.
 106 MRS. STRAWBRIDGE—Wild Flowers.
 107 MRS. RANDALL, STRANGWAYS-TERRACE—Group of flowers (loan).
 108 MRS. WIDGERY, MAGILL-ROAD—Lighthouse (loan).

ARCHITECTURAL DRAWINGS.

(In the Concert Hall.)

- D. GARLICK, REGISTER CHAMBERS, GRENFELL-STREET, ADELAIDE—
 1 Premises in King William-street for Colonial Mutual Life Association.
 2 Premises in Rundle-street for Mrs. Hornabrook.
 3 Design for Anglican church.
 4 R. G. HOLWELL, 4, OLD EXCHANGE, ADELAIDE—St. John's Church.
 D. GARLICK, REGISTER CHAMBERS, GRENFELL-STREET, ADELAIDE—
 5 Interior of Examination Hall, St. Peter's College.
 6 Messrs. Donaldson, Andrews, & Sharland's Warehouse, Rundle-street.
 7 E. SUMMERHAYES, DULWICH, ADELAIDE—The Kremlin, Moscow (not for competition).
 D. GARLICK, REGISTER CHAMBERS, GRENFELL-STREET, ADELAIDE—
 8 St. Barnabas Theological College, North Adelaide.
 9 Perspective of a Competitive Design for a Wesleyan Church for Brisbane.
 10 National Bank of Australasia, North Adelaide.
 11 Southern Cross Hotel, King William-street, Adelaide.
 12 Prince Alfred College, Kent Town.
 13 First premiated Design for Lecture Hall at St. Peter's Collegiate School, Adelaide.
 14 A. J. MURRAY, MORIALTA—Design for Cathedral.
 15 A. G. SALMON—Memorial to the late E. M. Bagot, in North Adelaide Cemetery.
 16 D. GARLICK, REGISTER CHAMBERS, GRENFELL-STREET, ADELAIDE—Marine residence at Brighton, for T. Bickford, Esq.

TAPESTRY AND NEEDLEWORK.

(In the Concert Hall.)

- 1 MISS M. SOLOMON, BUCKHURST HOUSE, 167, GOVER-STREET, N.A.—Battle of Langside.
 2 MISS S. A. RAGLESS—Flower on satin.
 3 MISS E. F. BROAD, KING WILLIAM-ROAD, UNLEY—Panel for screen. Oil.
 4 MISS M. BRAZILL, CHAPEL-STREET, NORWOOD—Australia's Coat of Arms.
 5 MRS. S. DOBELL—The Seraphim touching Isaiah's lips with a coal from the altar.
 6 MISS A. P. CHURCHETT, REGENT-STREET, ADELAIDE—Arrivée de Rebecca. MISS MATTHEWS—
 7 English Coat of Arms.
 8 The *Minotaur* Ironclad.
 9 MISS SARAH WELCH, CARE OF W. H. CHARLTON, SOUTH-TERRACE—Crochet work toilet set.

- 10 Miss M. SOLOMON, BUCKHURST HOUSE, 167, GOVER-STREET, N.A.—
Raised bird in wool.
- 11 Mrs. J. MELLOR, HOLINFORTH, FULHAM—Madonna and Child.
- 12 Miss M. SOLOMON, BUCKHURST HOUSE, 167, GOVER-STREET, N.A.—
Crewel work on paper.
- 13 Mrs. J. MELLOR, HOLINFORTH, FULHAM—Eagle and its Prey.
- 14 Miss W. FERNELLEY—Toilet set, eleven pieces.
- 15 Miss ROUNSEVELL, HUTT-STREET—Christ blessing little Children.
Miss R. KING—
- 16 Mantle Drapery, Poonah Painting.
- 17 Poonah Painting.
- 18 Miss M. SOLOMON, BUCKHURST HOUSE, 167, GOVER-STREET, N.A.—
Joseph presenting his Father to Pharaoh.
- 19 Mrs. J. MELLOR, HOLINFORTH, FULHAM—Napoleon Crossing the Alps.

MISCELLANEOUS.

(In the Concert Hall.)

- 1 to 3 Mrs. NEEDHAM, PORT MACDONNELL—Photo. frames, with seaweed design.
- 4 to 7 Miss DENING, BORDERTOWN—Pictures in seaweed.
- 1 to 14 R. REDWICK—Decorative panelling.

MEDALLIONS AND CASTS IN PLASTER.

(In the Concert Hall.)

- A. SAUPE, NELSON-STREET, STEPNEY—
- 1 Profile head of C. Reimers
- 2 Chas. Gosse, Esq., M.D.
- 3 Rev. James Way.
- MAXWELL, —, NEW PARLIAMENT HOUSES—
- 4 Original model of the Nativity
- 5 Cupids
- 6 The Peata.

SCULPTURE IN SLATE AND STONE AND OTHER MATERIAL.

- W. KENNEDY, NOARLUNGA—
- 9 Picture from nature (slate), on view in Eastern Annexe.
- 9 Pastoral scene (stone), “ “
- 9 Picture from nature (slate), “ Main Building, West, S.A. Court.
- W. H. HEDDLE, THEBARTON—
- 13, 14 Carved marble picture frames, “ “
- R. WALSH, WOODVILLE—
- 20 Fire screens carved in wood with pocket-knife, on view in Main Building, West, S.A. Court.
- A. SAUPE, NELSON-STREET, STEPNEY—
- Bust, Sir Samuel Davenport, K.C.M.G., Art Gallery, Main Building.
- Bust, E. T. Smith, Esq., M.P., and Vice-President of Adelaide Jubilee International Exhibition, Art Gallery, Main Building.
- EABLE, BROS., YONGALA—
- Carving in bone, &c., Eastern Annexe, S.A. Court.
- MR. FITZPATRICK, NORTH-TERRACE—Bridal bouquet, carved in cuttle-fish, S.A. Court, Main Building, next Wax Models of Fruit.

- 54 **HAMER, T. H., GREENFELL-STREET—**
Engraving on brass salver, original design by Mr. Hamer, S.A. Court,
Main Building, near Models of Wax Fruit.
- 12 **MISS E. B. AIRD—**Manteldrape, figures painted in oils on porcelain

PHOTOGRAPHS.

*(In the Eastern Annexe.)***F. C. KRICHAUFF, ANGAS-STREET—**Collection of photos. of scenery.*(In the Main Building, Western Court.)***HAMMER & Co., RUNDLE-STREET—**Collection of photos.*(In the Main Building, Eastern Court.)***JOHN HOOD—**Collection of photos.

- 67 **ANGASTON AND DISTRICT—**Angaston Court.

- 18 **G. WATSON—**Views of Mount Gambier.

*(In the Concert Hall.)***ENGINEER-IN-CHIEF, S.A., VICTORIA-SQUARE, ADELAIDE—**

- 1 South Australian Railways—Northern System.
- 2 South Australian Railways—Miscellaneous.
- 3 South Australian Railways—Southern System.
- 4 South Australian Railways—Miscellaneous.
- W. DUFFIELD, SEA WALL, GLENELG—
- 5 Views on the Onkaparinga River.
- 6 Evening Shadows, Patawaalonga Creek.
- 7 At Para Para.
- 8 **HAMMER & Co., RUNDLE-STREET—**Trees in the Botanic Gardens, Adelaide.
- 9 **CAPT. SWEET, ARCADE, ADELAIDE—**Capt. Sweet's Photographs of Adelaide.
- 10 **G. F. JENKINSON, LAURA—**A Glance at our Northern Areas.
- 11 **J. BRYTHEN, COMMERCIAL-ROAD, PORT ADELAIDE—**South Australian Views.
- 12 } **W. DUFFIELD, SEA WALL, GLENELG—**Instantaneous Views at Para
- 13 } Para.
- 14 }
- 15 }
- 16 } **J. W. ELLIOT, STRATHALBYN—**Strathalbyn and its neighborhood.
- 17 }
- 18 **AREAS PHOTOGRAPHIC COMPANY, LAURA—**Specimens of up-country Photography, taken in a travelling studio.
- 18A } **S.A. AMATEUR PHOTOGRAPHIC SOCIETY—**Various scenes.
- 18B }

*(In the Armament Hall.)***ROYAL COMMISSIONERS FOR SOUTH AUSTRALIA—**

- 2 Views near Angaston.
- 4 Lighthouse Map of South Australia.
- 5 Plan of Port Adelaide Harbor.
- 6 Chart of the Port River.
- 7 Clarendon Vineyard, near Adelaide.
- 8 Reaping Machine at work.
- 9 View from Morialta, near Adelaide.
- 10 Black Hill, Mount Lofty Ranges.
- 11 Auldana Vineyard, near Adelaide.
- 12 West Auldana Vineyard.
- 13 Botanic Gardens, colored.

- 14 Palm House, Botanic Gardens, Adelaide.
- 15 Botanic Gardens, Adelaide.
- 16 Palm House, Botanic Gardens, Adelaide.
- 17 Botanic Gardens, Adelaide.
- 18 Gum Trees, Torrens Park.
- 19 Bridge over Torrens, Adelaide.
- 20 Olive Trees, Adelaide.
- 21 Gum Tree, Adelaide.
- 22 A Public School.
- 23 Grenfell-street, Adelaide.
- 24 Gum Tree, near Adelaide.
- 25 Town Hall, Port Adelaide.
- 26 Institute and Museum, Port Adelaide.
- 27 Public School, Norwood.
- 28 The Bank of Adelaide, Adelaide.
- 29 Deaf, Dumb, and Blind Asylum, at Brighton, near Adelaide.
- 30 Town Hall, Adelaide.
- 31 Circulating Library, Adelaide.
- 32 Rundle-street, Adelaide.
- 33 Stud Merino Sheep, South Australia.
- 34 Proposed Public Library, Museum, and Art Gallery, Adelaide. Left wing erected.
- H. Y. L. BROWN, F.G.S., GOVERNMENT GEOLOGIST—
- 41 Photographs illustrative of the geological features of South Australia.
- 42 The Hon. G. C. Hawker's Bungaree Station.
- 43 Photographs illustrating traces of glacial action at Hallett Cove, South Australia.
- MRS. SWEET, ADELAIDE—
- 44 Capt. Sweet's photos. of Adelaide.
- 45 Capt. Sweet's photos. of Adelaide.
- 46 Capt. Sweet's photos. of Adelaide.
- 47 Capt. Sweet's photos. of Adelaide.
- ROYAL COMMISSIONERS—
- 48 Aboriginal throwing Boomerang.
- 49 Aboriginal throwing Spear.
- 50 Aboriginal, South Australia.
- 51 Stump-jumping plough, J. W. Stott & Sons.
- 52 Scrub roller, J. W. Stott & Sons.
- 53 Mallee and bush cutter, Stott & Sons.
- 54 Mallee and bush cutter, Stott & Sons.
- 55 Stump-jumping scarifier, Stott & Sons.
- 56 Earth-scoop, J. W. Stott & Sons.
- 57 Scrub roller, J. W. Stott & Sons.
- 58 Stump-jumping plough, Stott & Sons.
- 59 R. LINDSAY, PORT ADELAIDE—A pair of compound marine engines, for steam launch.
- ROYAL COMMISSIONERS—
- 60 Aboriginal throwing Spear with Woomerah.
- 61 Boys of the Mission School, Point Macleay.
- 62 Point Macleay Mission Station.
- 63 Point Macleay Mission Station.
- 64 CHAMBER OF MANUFACTURES—Illustrations to Brown's Tree Culture, drawn on stone at the Government Printing Office, Adelaide.
- 65 ROYAL COMMISSIONERS—Dredger on the Port River.
- 68 MARINE BOARD—The *Lady Diana* steam-launch.
- T. DUBYEA, RUNDLE-STREET.—Collection of photos.
- HAMMER & Co., RUNDLE-STREET.—Collection of photos.

BASEMENT.

- 227 *Industrial School for the Blind, North Adelaide*—A large collection of brushware, mats, basketware, &c.; also, blind people at work, showing the process of manufacturing the same.
- 228 *John Reid & Sons, Hindmarsh*—Leather of all descriptions—sole, harness, &c.
- 229 *Scriven Bros., Hindmarsh*—Collection of dressed leathers.
- 230 *David Reid, Hindmarsh*—Sole, dressing, and harness leather.
- 231 *Adelaide Co-operative Cooperage Co. (Henderson, Manager), Currie-street, Adelaide*—Wine casks, hogsheads, barrels, half-barrels, kegs, beef tierces, cheese vats, butter tubs, barrel churns, &c.
- 232 *J. F. Gerner & Co., Currie-street, Adelaide*—Casks, barrels, &c., of all descriptions used by winegrowers. Cooperage of all other kinds.
- 233 *E. A. Adams, jun., Hindmarsh-square east, Adelaide*—Fancy cooperage in models of all kinds; also, general cooperage, commercial size.
- 234 *Peters & Fuller, Pirie-street, Adelaide*—Spider buggy.
- 235 *Cox & Witherick, Waymouth-street, Adelaide*—Hooded buggy.
- 236 *Duncan & Fraser, Franklin-street, Adelaide*—Adelaide phaeton or hooded buggy, 5-glass landau with spring head.
- 237 *T. Barlow & Son, Hindmarsh-square, Adelaide*—Landau with iron skeleton front, lever brakes to work by hand or foot, double self-acting step, &c.; also, family wagonette with movable head and partition. These carriages are fitted and trimmed with all the latest improvements.
- 238 *W. H. Ray, O'Connell-street, North Adelaide*—Buckboard buggy and carriage.
- 239 *Clarke Bros., Franklin-street, Adelaide*—Landau, brougham, victoria, pony cart, express wagon, and hooded buggy.
- 240 *Barlow Bros., Flinders-street, Adelaide*—Wagonette and buggy.
- 241 *Duncan & Fraser, Franklin-street, Adelaide*—Show desk and album stand, made of colonial blackwood.
- 242 *Goodier & Co., Marion-street, Glanville*—Bottled ale and porter.
- 243 *Carstairs & Coxell, Currie-Street, Adelaide*—A display of aerated waters, cordials, liqueurs, bitters, &c.
- 244 *D. & R. J. Fotheringham, Gawler*—Aerated waters, liqueurs, bitters, cordials, bottled ale and porter.
- 245 *F. Pfau & Co., Blumberg*—Mimosa bark in its various states, and manufactured for tanning purposes and export.
- 246 *Pearce, Wincey, & Co., Gawler*—Wattle bark, ground and powdered.
- 247 *J. Cornish & Co., Normanville*—Mimosa bark, ground, faggot, and cut bark.
- 248 *Borrow & Haycraft, Echunga*—Mimosa tannage from the mimosa or golden wattle; specimens of leather tanned, and specimens of the wattle from which the extract is made.
- 249 *Mount Gambier Produce Company (A. W. Sandford & Co.)*—Cheese, butter, bacon, eggs, &c.
- 250 *S. Tapscott, Mount Pleasant*—Cheese.

SOUTH AUSTRALIAN WINES.

For Competition.

- 251 *Auldana Vineyard (W. P. Auld, Proprietor), Auldana*—Light, dry, full bodied, 1881; light dry, 1883; full bodied, fruity, 1882; light ruby, 1883; light dry, 1881; full bodied, dry ruby, 1884; full bodied sweet, 1885; full bodied, 1884.

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- 252 *Sir Samuel Davenport, Beaumont*—White wine, full bodied, dry, 1883; white wine of light character, 1884, 1887; Vermouth, cognac wine, 1885; red wine of light character, 1887; red wine, full bodied, fruity, 1883; sparkling wine of champagne character, 1885; white wine, full bodied, fruity, 1885.
- 253 *W. F. Thompson, Happy Valley*—Full sherry, 1869 and 1880; full bodied, tart, 1880; fruity, 1883; claret, light, 1884.
- 254 *W. F. Thompson, Happy Valley*—Light muscatel, 1884, claret, mataro, 1884; sherry and mataro, fruity, 1883.
- 255 *W. Salter & Sons, Saltram Vineyard, Angaston*—Red, sweet, full bodied, fruity, 1868, 1879, 1883, 1884, 1877; red, full bodied, fruity, 1877; red, full bodied, dry, 1875, 1878, 1879; white, full bodied, fruity, 1876, 1878, 1881; white wine, full bodied, dry, 1875, 1878, 1883.
- 256 *J. M. Richman, Watervale*—White wine of light character, 1880, 1881, 1882, 1887; white wine, full bodied, dry, 1876, 1870; white wine, full bodied, fruity, 1878, 1880, 1883; red wine of a light character, 1878, 1882, 1883; red wine, full bodied, dry, 1879, 1880; red wine, sweet, full bodied, fruity, 1879, 1880.
- 257 *Thos. Hardy, 78, Currie-street, Adelaide*—White, light character, 1884, 1885, 1883; red, light, dry character, 1876, 1882, 1883, 1884; white, full bodied, dry, 1875, 1879, 1880, 1882, 1883, 1884; red, full bodied, dry, 1883; red, fruity, 1880; white, sweet, 1882, 1884, 1885; red, sweet, 1880, 1884, 1885.
- 258 *B. Seppelt, Seppeltsfield, P.O., Greenock*—Port, full bodied, sweet, 1880, 1881, 1882, 1883, 1884; sherry, full bodied, sweet, 1879, 1880, 1881, 1882; riesling, light, 1883, 1884; claret, light, 1882, 1883, 1884; banquette, light, 1877, 1882, 1883, 1885; frontignac, full bodied, sweet, 1882; tokay, light, 1882; dry sherry, light, 1885.
- 259 *Wm. Jacob, Moorooroo, P.O., Rowland's Flat*—Light dry riesling, 1881; light, dry, sweet verdeilho, 1884; light sweet frontignac, 1885; light dry carbonet and shiraz, 1880.
- 260 *Penfold & Co., Grange Vineyard, Magill*—Light white wine, 1884, 1885; light, medium strength, white, 1884, 1885; white, full bodied, medium, 1884, 1885; white, light, dry, sherry character, 1883; white, sweet, full bodied, dessert, 1883, 1884; light red, claret type, 1885; light red, medium, 1884, 1885; red, full bodied, medium, sweet, 1883, 1884; red, full bodied, 1883, 1884; port, full bodied, medium, sweet, 1879; red, full bodied, sweet, 1883, 1884; sweet, full bodied, 1876; tokay imperial, fruity wine, 1884; muscatel, sweet, dessert, 1882.
- 261 *N. E. T. Kaines, 15, Currie-street, Adelaide*—Port, 1883; sherry, 1870; reisling, 1881; burgundy, 1880.
- 262 *J. H. Foureux, Brompton Park*—Champagne, for report, 1882.
- 263 *E. W. Wright, Home Park Vineyard, Magill*—S.A. Wines—Muscatel, sweet, full-bodied, 1885; claret, malard, dry, 1885; constantia, sweet, full bodied, 1884, shiraz, and others; port, sweet, full bodied, 1885.
- 264 *Wm. Gilbert, Pewsey Vale, Lyndoch*—Reisling, white, light, dry, 1885; sherry, carbonet, light, dry, red, 1882; carbonet, red, full bodied, 1882; shiraz, light, dry, red, 1885.
- 265 *S. Smith & Sons, Yalumba Vineyard, Angaston*—Light reisling, 1880; frontignac, light, 1884; sherry, light, 1884; sherry, white, full bodied, dry, 1870; frontignac, white, full bodied, dry, 1883; muscatel, white, full bodied, fruity, 1884; frontignac, white, full bodied, fruity, 1885; verdeilho, white, full bodied, fruity, 1883, 1885; ruschette, white, full bodied, fruity, 1886; peyan, white, full bodied, fruity, 1884; mataro, red wine, 1885; shiraz, red, full bodied, dry, 1885; dolcetto, red, full bodied, fruity, 1881; shiraz, red, full bodied, fruity, 1880, 1882, 1883; reisling, 1881.

- 266 *E. B. Young & Co., Holmsdale Vineyard, Kanmantoo*—Shiraz, mataro, and grenache, 1883; shiraz, grenache, and mataro, 1884; shiraz and grenache, 1868; shiraz and grenache, full bodied, sweet, 1886; shiraz, mataro, and grenache, claret, 1884; shiraz, mataro, and grenache, light red, 1883.
- 267 *E. W. Schroeder, Rebensberg, Hahndorf*—Madeira, light dry wines, 1881; malfasir, light dry wines, 1884.
- 268 *S. & W. Sage, Angaston*—Reisling, light, 1883-1886; frontignac, fruity, 1883-1886; shiraz, full bodied, sweet, 1882-1885; puican and sweet water, full bodied, light, 1883, 1884; shiraz, sweet, unfermented, non-alcoholic, 1886.
- 269 *Wilkinson & Mason, 71, King William-street, Adelaide*—Shiraz and frontignac, red port, full bodied, 1881; frontignac, full bodied, red, 1883; madeira, full bodied, white, 1884; shiraz and frontignac, full bodied, red, sweet, 1881.
- 270 *Sir R. D. Ross, Highercombe*—Light shiraz, carbonet, 1884; light reisling, madeira, 1884; tokay and spanish, fruity, 1884.
- 271 *Hon. John Crozier, Oaklands, Marion*—Grenache, full bodied, sweet, 1884; pedro, full bodied, dry, white, 1883; shiraz and grenache, light-red white, 1884; shiraz, full bodied, red, 1883.
- 272 *Sir Thomas Elder, Birksgate, Glen Osmond*—Shiraz, red, sweet, full bodied, fruity, 1880; shiraz, red, full bodied, dry, 1880; frontignac, sweet, white, 1881; madeira, white, full bodied, fruity, 1879; red wine, full bodied, dry, shiraz, 1884; white wine, full bodied, dry, 1880.

SPIRITS.

For Competition.

- 273 *Thos. Hardy, 78, Currie-street, Adelaide*—Brandy.
- 274 *Wm. Gilbert, Pewsey Vale*—Spirits of wine, about 18 per cent. of proof spirit.
- 275 *B. Seppelt, Seppeltsfield, P.O., Greenock*—Spirits of wine, brandy, pale, ginger wine, ginger brandy, cherry brandy, rum punch.
- 276 *Carstairs & Coxell, Currie-street, Adelaide*—Rum punch, ginger brandy, ginger wine.
- 277 *Ryan & Co., Gray-street, Adelaide*—Ginger brandy, ginger wine.
- 278 *Hall & Son, Norwood*—Ginger wine, ginger brandy, rum punch.
- 279 *Crowder & Co., Franklin-street, Adelaide*—Rum punch, ginger brandy, ginger wine.
- 280 *Stephens & Co., Waymouth-street, Adelaide*—Ginger brandy, cherry brandy, ginger wine, rum punch.
- 281 *D. & R. J. Fotheringham, Gawler*—Ginger wine, ginger brandy.
- 282 *A. M. Bickford & Son, Currie-street, Adelaide*—Ginger wine, ginger brandy, cherry brandy.
- 283 *Adelaide Aerated Water and Brewing Company, Limited, Angas-street, Adelaide*—Ginger wine, ginger brandy, rum punch.

LIQUEURS.

For Competition.

- 284 *Thos. Hardy, 78, Currie-street, Adelaide*—Liqueurs, tonic wine, and Vermouth wine.
- 285 *W. Salter & Son, Angaston*—Liqueurs.
- 286 *B. Seppelt, Seppeltsfield, P.O., Greenock*—Kummel liqueurs, curaçoa liqueur, maraschino liqueur, vanilla, rosely, and parfait amour.
- 287 *Geo. Hall & Sons, Norwood*—Curaçoa, kummel.
- 288 *W. N. Crowder & Co., Franklin-street, Adelaide*—Kummel.
- 289 *Stephens & Co., Waymouth-street, Adelaide*—Kummel and curaçoa.

- 290 *A. M. Bickford & Son, Currie-street, Adelaide*—Curaçoa, maraschino, and kummel.
 291 *Adelaide Aerated Water and Brewing Co., Limited, Currie-street, Adelaide*—Absinth, benedictine, curaçoa, kummel, maraschino, noyau, and chartreuse.
 292 *Smith & Sons, Angaston*—Frontignac liqueur.

BEERS.

For Competition.

- 293 *G. E. Gray, Hyde Park Brewery*—Bottled ale, bottled stout, draught ale.
 294 *A. W. & T. L. Ware, Torrenside Brewery, Hindmarsh*—Colonial bottled lager, malt ale, colonial bottled colonial ale, XX and XXX colonial bottled stout, XX and XXX colonial bulk ale, colonial bulk stout, XX and XXX.
 295 *Chambers & Blades, Dragon Brewery*—Ale, porter, malt.
 296 *Robt. Tilley, Lion Bottling Company, North Adelaide*—Pale ale, lager beer, porter.
 297 *W. Knapman, Cannon Brewery, Port Adelaide*—Bottled ale, bottled porter, bulk ale.
 298 *W. Goodier & Co., Marion-street, Glanville*—Bottled beer, bottled porter, bulk beer.
 299 *Stephens & Co., Waymouth-street, Adelaide*—Bottled ale and porter, bulk ale and porter.
 300 *Chas. Shand, Eastwood*—Bulk ale, bottled ale and porter, bulk porter.
 301 *Ryan & Co., Gray-street, Adelaide*—Porter.
 302 *W. & G. Dancker, Macclesfield*—Draught pale ale, draught ale, XX bottled ale.

CORDIALS.

For Competition.

- 303 *B. Seppelt, Seppeltsfield, P.O. Greenock*—Quinine wine, peppermint, lemon syrup, cloves, limejuice cordial, raspberry vinegar, gingerette.
 304 *Carstairs & Coxell, Currie-street, Adelaide*—Peppermint, limejuice cordial, raspberry balm, sarsaparilla, pine apple cordial.
 305 *Geo. Hall & Son, Norwood*—Limejuice cordial, peppermint, raspberry balm, raspberry vinegar, sarsaparilla, cloves, lemon syrup.
 306 *Ryan & Co., Gray-street, Adelaide*—Sarsaparilla, limejuice cordial, peppermint, lemon syrup, raspberry vinegar, cloves.
 307 *Crowder & Co., Franklin-street, Adelaide*—Limejuice cordial, raspberry vinegar, raspberry balm, cloves, peppermint, lemon syrup, sarsaparilla.
 308 *Stephens & Co., Waymouth-street, Adelaide*—Peppermint, lemon syrup, cloves, limejuice, raspberry vinegar, sarsaparilla.
 309 *D. & R. J. Fotheringham, Gawler*—Cloves, peppermint, raspberry balm, raspberry vinegar, sarsaparilla, lemon syrup, limejuice cordial.
 310 *A. M. Bickford & Son, Currie-street, Adelaide*—Peppermint, cloves, raspberry, sarsaparilla, lemon syrup.
 311 *Adelaide Aerated Water and Brewing Company, Limited, Angus-street, Adelaide*—Sarsaparilla, peppermint, limejuice cordial, pure limejuice, raspberry balm, cloves, raspberry vinegar, rum shrub, lemon syrup shrub, vanilla, pine apple.

AERATED WATERS.

For Competition.

- 312 *Adelaide Aerated Water and Brewing Co., Limited, Angus-street, Adelaide*—Ginger ale, champagne ginger beer, carrara water, soda water, tonic water, seltzer water, potash water, lithia water, magnesia water, ginger beer, fermented sarsaparilla, and lemonade.

- 313 *George Hall & Son, Norwood*—Lemonade, soda water, ginger ale, sarsaparilla, seltzer water, and tonic water.
- 314 *Ryan & Co., Gray-street, Adelaide*—Soda water, lemonade, sarsaparilla, ginger ale, and tonic water.
- 315 *Crowder & Co., Franklin-street, City*—Soda water, lithia, seltzer, magnesia, and potash waters, lemonade, ginger ale, champagne ginger beer, and sarsaparilla.
- 316 *D. & R. J. Fotheringham, Gawler*—Lemonade, ginger ale, soda water, sarsaparilla, and champagne ginger beer.
- 317 *A. M. Bickford & Son, Currie-street, Adelaide*—Soda water, eau de seltzer, tonic, potash, and lithia waters, ginger ale, ginger beer, lemonade, splash, and sarsaparilla.
- 318 *G. & W. Dancker, Macclesfield*—Soda water, lemonade, ginger ale, and sarsaparilla.

BITTERS.

For Competition.

- 319 *B. Seppelt, Seppeltsfield, P.O., Greenock*—Orange bitters, Vermouth of Turin, excelsior bitters, Angostura, stomach, doctor, boonekamp, white cross, and hop bitters.
- 320 *Carstairs & Coxell, Currie-street, Adelaide*—Orange bitters, doctor, quinine, and Kent hop.
- 321 *Geo. Hall & Son, Norwood*—Kent hop bitters, orange, doctor, stomach, boonekamp, Vermouth, and quinine.
- 322 *Ryan & Co., Gray-street, Adelaide*—Quinine, Kent hops, and orange bitters.
- 323 *Crowder & Co., Franklin-street, Adelaide*—Kent hop, Kent, eucalyptus, boonekamp, doctor, Australian hop tonic, quinine wine bitters.
- 324 *Stephens & Co., Waymouth-street, Adelaide*—Kent hop, jubilee, orange, stomach, doctor, Canadian, and quinine bitters.
- 325 *D. & R. J. Fotheringham, Gawler*—Doctor, hop, orange, and quinine wine bitters, quinine wine, stomach and Stoughton bitters.
- 326 *A. M. Bickford & Son, Currie-street, Adelaide*—Orange, Kent, hop, stomach, doctor, and quinine wine bitters.
- 327 *Aerated Water and Brewing Company, Limited, Angas-street, Adelaide*—Hop, Kent hop, quinine wine bitters, orange, stomach, Vermouth, doctor, Angostura, hot Tom bitters.

CIDER.

For Competition.

- 328 *Crowder & Co., Franklin-street, Adelaide*—Champagne cider.
- 329 *Adelaide Aerated Water and Brewing Co., Limited, Angas-street, Adelaide*—Cider.

VINEGAR.

For Competition.

- 330 *B. Seppelt, Seppeltsfield, P.O., Greenock*—White wine vinegar and brown vinegar.

FLUID MAGNESIA.

For Competition.

- 331 *Geo. Hall & Sons, Norwood*—Fluid magnesia.
- 332 *Crowder & Co., Franklin-street, Adelaide*—Fluid magnesia.

SAUCES.

For Competition.

- 333 *Ryan & Co., Gray-street, Adelaide*—Worcester sauce and tomato sauce.
- 334 *D. & R. J. Fotheringham, Gawler*—Bringall and tomato sauce.

NORTHERN ANNEXE.

- 335 E. S. WIGG & SON, RUNDLE-STREET, ADELAIDE—Stationery, account books, &c., bookbinding, and printing of various descriptions.
- 336 SANDS & McDUGALL, 64, KING WILLIAM-STREET, ADELAIDE—Account books, ruled, ruled and printed, in various bindings, styles, &c.
- 337 T. S. CARRY & Co., WAYMOUTH-STREET, ADELAIDE—Showcase of printed samples, showcards, bills, books, &c.
- 338 R. HONEY, LION TIMBER YARD, PORT ADELAIDE—Case with samples of mouldings, turnery, &c., used in building trade.
- 339 McDUGALL & GOW, ROPEE-STREET, ADELAIDE—Door and frame complete.
- 340 WALTER & MORRIS, SARNIA TIMBER YARD, PORT ADELAIDE—Timber, mouldings, turnery, &c.
- 341 T. K. STUBBINS, TIMBER MERCHANT, PIRIE-STREET, ADELAIDE—Timber, and specimens of timber bent for various purposes, mouldings, mantels, &c.
- 342 CAWTHORNE & Co., Y.M.C.A. BUILDINGS, GAWLER-PLACE, ADELAIDE—Collection of musical compositions.
- 343 J. H. SHERRING & Co., CURRIE-STREET, ADELAIDE—Collection of printed matter of all kinds, account books, bookbinding, &c.
- 344 FRED. HERRING, WEST-TERRACE, ADELAIDE—Monumental work.
- 345 W. H. MARTIN, KING WILLIAM-STREET SOUTH, ADELAIDE—Enamelled slate mantelpieces.
- 346 MELLOR BROTHERS, FRANKLIN-STREET, ADELAIDE—Stripper, stump-jumping ploughs, &c.; also models of stump-jumping ploughs, scarifiers, and other agricultural machinery, in motion.
- 347 W. K. THOMAS & Co., "REGISTER" OFFICE, GREENFELL-STREET, ADELAIDE—The first printing press used in the colony.
- 348 T. F. MELLOR, EXCHANGE, ADELAIDE—The jubilee gold-washing cradle, patented December 2nd, 1886.
- 349 GRAY BROS., LEADENHALL-STREET, PORT ADELAIDE—Railway axles, wheels, and buffer-heads, and all kinds of heavy iron forgings.
- 350 FORWOOD, DOWN & Co., HINDLEY-STREET WEST, ADELAIDE—Ornamental ironwork, wine-press, pumps, pulley-wheels, &c.
- 351 HYDRAULIC ENGINEER, HYDRAULIC ENGINEER'S DEPARTMENT, GOVERNMENT OFFICES, VICTORIA-SQUARE, ADELAIDE—General appliances used by Hydraulic Engineer's Department in connection with the water supply in South Australia and the Adelaide sewers, colonial made.
- 352 UNION ENGINEERING COMPANY, NORTH-TERRACE, ADELAIDE—Castings, consisting of pumps and detail parts of machinery.
- 353 GEO. FOTHERINGHAM, GERMEIN-STREET, SEMAPHORE—Portable combination boiler.
- 354 A. O. CHAMBERS, FLINDERS-STREET, ADELAIDE—Washing machines, churns, reading-stand, verandah chairs, steps, garden seats, butter workers, moulds, and folding hammocks.
- 355 H. J. KEIPERT, CROWN FOUNDRY, LAURA—Ploughshares, scarifier-shares, umbrella stands, door-scrapers, wheel pinions, and sundry castings.
- 356 T. S. BAGSHAW & SON, ELIZABETH-STREET, ADELAIDE—Agricultural machinery, winnowing-machines, horsepower, chaffcutter, corncrusher, &c.
- 357 CARL BARTH, NELSON-STREET, STEPNEY—Bird cages, wire baskets, fancy goods, utensils, sand sieves and screens, &c.

- 358 J. GARDINER, PORT-ROAD, HINDMARSH—All kinds of compositions, pastes, and liquids for polishing plate, plate glass, metals, furniture, and harness.
- 359 ROBT. HARRIS & Co., BLYTH-STREET, ADELAIDE—Brushware, household, stable, toilet, fancy, machine, and all other kinds.
- 360 ADELAIDE BROOM MANUFACTURING CO., FRANKLIN-STREET, ADELAIDE—Carpet brooms and wiaks.
- 361 J. R. B. POOLE, & Co., BOWEN-STREET, ADELAIDE—Tomato, Worcester, and other sauces.
- 362 HARROLD BROS., HINDLEY-STREET, ADELAIDE—Gold cradle.
- 363 WM. BURTON, c/o MR. WILKES, CURRIE-STREET, ADELAIDE—Horse-shoes, two collections, one finished and one off the hammer; all hand made.
- 364 H. J. MOSELEY, PINK LAKES, YORKETOWN—Butchers' salt, table, rock, and salt of all kinds.
- 365 J. BENNETT, NILE-STREET, PORT ADELAIDE—Bolts and nuts, dog-spikes, and cart axles.
- 366 L. CONRAD, HINDLEY-STREET, ADELAIDE—Preserved meats, mutton hams, fritz sausages, butchers' small goods, dripping, bacon, ham, &c.
- 367 MOUNT GAMBIER PRODUCE (A. W. SANDFORD & Co., AGENTS)—
J. McArthur—Wheat, oats, and potatoes. J. Paris—Cheese. Arch. Smith—Peas. R. Brougham—Hops. D. Norman—Hops. J. Dyke—Wheat. C. Englebrecht—Spirits. J. Kilsby—Hops. T. Kelly—Stone. J. Medhurst—Wheat. Gallard Barrett—Two bags potatoes. Jas. Smith—Three bags rye. T. H. Williams—Two bags flour. H. E. Norman—Hops.
- 368 A. W. DOBBIE & Co., GAWLER-PLACE, ADELAIDE—Sewing machines and samples of goods electro-plated.
- 369 GEO. P. HARRIS, SCARFE, & Co., GAWLER-PLACE, ADELAIDE—Ferrier's patent lever wool press, with the newly-improved traversing boxes, as invented and used by A. McFarlane, Esq., Wellington, South Australia; American churns, Adelaide box churns, wood, sack, and store trucks, garden seats, ice chests, James's patent portable washing boiler, galvanized gutter, ridging, pipe, &c.
- 370 LOBETHAL WOOLLEN FACTORY (D. ROBIN, SECRETARY, GAWLER-PLACE, ADELAIDE), LOBETHAL—Machine at work making cloth, &c.
- 371 F. H. CLARK & Co., NORTH-TERRACE, ADELAIDE—Korting Bros'. gas engine; band saw.
- 372 HENDERSON & Co. RUNDLE-STREET, ADELAIDE—Confectionery, steam revolving pan in operation, and apparatus used for melting by steam.
- 373 W. H. BURFORD & SON, STURT-STREET, ADELAIDE—Soap stamping machine and candle-making appliance.
- 374 MACKLIN, HALL, & Co., FRANKLIN-STREET, ADELAIDE—Insect-destroying powder.
- 375 E. COLLE, RUNDLE-STREET, ADELAIDE—Modelling of figures, brackets, &c., in plaster of Paris, and showing the process of manufacture.
- 376 CLARK BROS., FRANKLIN-STREET, ADELAIDE—Hooded Abbott buggy.
- 377 TRUSLOVE & ADDISON, ORROROO—Flour.
- 378 DELAND & Co., HAMLEY BRIDGE—Flour.
- 379 C. FINCK, GREENOCK—Flour, roller process.
- 380 CHAS. KIMBER & SON, CLARE—Flour, pea meal, and split peas.
- 381 G. HILFERS & Co., GAWLER—Flour.
- 382 KNEESE & SON, CRYSTAL BROOK AND PORT PIRIE—Roller flour.
- 383 W. THOMAS & Co., LEADENHALL-STREET, PORT ADELAIDE—Wheat and flour, roller made.
- 384 ADELAIDE MILLING AND MERCANTILE CO. (LIMITED), VICTORIA-SQUARE, ADELAIDE—Wheat and flour, stone-dressed and roller.

- 385 W. C. HARRISON & Co., PORT ADELAIDE—Roller flour and wheat..
- 386 J. DUNN & Co., PORT ADELAIDE—Flour, Eclipse roller; and biscuits and bread made from it; also photographs of their mills.
- 387 J. & C. HAGE, GREENOCK—Dietetic coffee, caraccas cocoa, and condition powders.
- 388 H. B. HAWKE & Co., KAPUNDA—Steam engine.
- 389 M. DONAGHY & SONS, QUEENSTOWN—Manila, coir, and all kinds of rope, lines, &c.
- 390 L. MEHRTENS, GILLES-STREET, ADELAIDE—Bonedust, sulphur phosphate, bone meal, animal charcoal, boneash, &c.
- 391 ADELAIDE CHEMICAL WORKS Co., NEW THEBARTON—Mineral acids, sulphates, chemicals, and chemical manures.
- 392 TAMLIN & COOMBE, CARRONDOWN—Ropes, lines, hayties, &c.
- 393 C. WILCOX, NORTH ADELAIDE—Chaffed hay, sheafed hay, wheat, oats, barley, crushed and whole, bran, pollard, &c.
- 394 BURFORD & SON, STURT-STREET, ADELAIDE—Two showcases, containing soap, &c., of different kinds.
- 395 T. MAGAREY, NARACOORTE—Four wool fleeces.
- 396 J. MURRAY (EXECUTORS OF), MOUNT CRAWFORD—Photographs, medals, diplomas, fleeces, &c.
- 397 J. H. ANGAS, COLLINGROVE, ANGASTON—Wool, wheat, and other natural products, paintings and photographs of cattle, farm, and stock, scenery, &c.
- 398 G. C. HAWKER, BUNGAREE—Four wool fleeces.
- 399 J. MURRAY (EXECUTORS OF), MOUNT CRAWFORD—Four wool fleeces.
- 400 F. H. DUTTON, ANLABY—Four wool fleeces.
- 401 SMITH & SWANN, FOWLER BAY—Four wool fleeces.
- 402 E. C. & J. L. STIRLING, NALPA AND HIGHLAND VALLEY—Four wool fleeces.
- 403 HON. A. B. MURRAY, WIRRARARA—Four wool fleeces.
- 404 JOHN ROUNSEVELL, CORRYTON PARK—Ten wool fleeces.
- 405 OSTERMEYER, DEWEZ, & Co., CURRIE-STREET, ADELAIDE—Collection of economic processes through which wool passes from the sheep's back to the carding mills.
- 406 AGRICULTURAL PRODUCTS, EXHIBITED BY THE FOLLOWING—
A. & J. McColl, wheat; T. Ashby, wheat; O. Raglass, sheafed hay, &c.; G. W. Steinwedel, wheat; E. & W. Hackett, oats, barley, and wheat; Jas. Hart, sorghum; T. Carling, peas, oats, wheat, and barley; — Dunn, field peas; Hon. D. Murray, hops; Norman & Co., barley; — Medland, scotch barley; W. M. Beasley, vegetables and fruit; A. Molineaux, wheat; J. Robertson, wheat and Cape barley; R. Smith, wheaten hay; W. Brook, malting barley; A. B. Sinclair, potatoes; — Millaquin, malting barley.
- 407 DUNCAN & FRASER, FRANKLIN-STREET, ADELAIDE—Tram car, same as used in Adelaide, also buckboard buggy.
- 408 BRAGLEHOLE & JOHNSTON, NORTH ADELAIDE—Malt of three different varieties.
- 409 SEWAGE FARM, ISLINGTON—Mangel wurzels grown at the Sewage Farm, Islington.
- 410 MAY BROS. & Co., GAWLER—Machinery, stripper, chaffcutters, pumps, vices, &c.
- 411 SOUTH AUSTRALIAN GAS COMPANY, GRENPELL-STREET, ADELAIDE—Gas stoves, gas fittings, &c.
- 412 J. G. RAMSAY & Co., MOUNT BARKER—Stripper, model of stripper and shearer, and agricultural machinery.
- 413 W. H. RAY, O'CONNELL-STREET, NORTH ADELAIDE—Buckboard buggy.
- 414 W. F. GRAY & Co., GAWLER-PLACE, ADELAIDE—Collection of galvanized-iron work, ventilators, air coolers, &c.

AGRICULTURAL IMPLEMENT HALL.

- 415 J. W. STOTT & SON, ALMA—Stripper; stump-jump scarifier; the "Little Wonder" grubbing machine; stump-jump three-furrow plough, with improved draught and lock; mallee cutter, will cut mallee trees from one to five years old, and takes a cut of 4ft. 6in. to 5ft. in diameter; improved earth scoop; three-furrow ordinary plough.
- 416 J. WHEATLEY, KAPUNDA—Two winnowing machines.
- 417 WALTER BLAKE, BALAKLAVA—Damp-weather stripping machine, for stripping and threshing standing corn in damp or ordinary weather; also wagon, as used for agricultural purposes.
- 418 JOS. BLAKE, SMITHFIELD—English wagon.
- 419 JAS. A. LAWTON, NORTH-TERRACE, ADELAIDE—Spring van and trolley.
- 420 H. B. HAWKE & CO., KAPUNDA—Horse power, castings, seed sowers.
- 421 A. DAWSON, BALAKLAVA—English wagon.
- 422 HEITHERSAY BROS., PETERSBURG—Ordinary three-furrow plough and three-furrow stump-jumping plough, each having patent reversible ploughshares.
- 423 J. G. RAMSAY & CO., MOUNT BARKER—Stripper and shearer.
- 424 J. MAXWELL, MANOOKA—Two three-furrow stump-jumping ploughs.
- 425 MELLOR BROS., FRANKLIN-STREET, ADELAIDE—Wagon, ploughshares, and mould boards.
- 426 WISNER & HILLEG, EUDUNDA—Stripper, stump-jumping double-furrow plough, stump-jumping scarifier, one leaf of stump-jumping harrow, German wagon.
- 427 W. H. MAY, WALLAROO—May's patent "Eureka" automatic relief plough.
- 428 R. CAMMERON & SONS, KAPUNDA—Adelaide stripper for ordinary weather, also Adelaide stripper for damp weather.

OUTSIDE.

- 429 J. H. TREWENACK, MAGILL—Terra-cotta fountain in centre of promenade.
- 430 A. SIMPSON & SON, GAWLER-PLACE—Garden-seats placed around the grounds.
- 431 ROYAL COMMISSIONERS FOR S.A., ADELAIDE—Model of blackfellow in canoe spearing fish.
- 432 C. E. DUTCH, MOUNT BARKER—Combined wheat thrashing machine, with straw elevator and wheat-cleaning attachment.
- 433 J. H. TREWENACK, MAGILL—A collection of the following goods, viz.:—Drain tiles and pipes, terra-cotta ware, fireclay goods, chemical stoneware, tiles for pavements, &c., earthenware and stoneware.
- 434 STIRLING DISTRICT COUNCIL, STIRLING—Blocks of freestone.
- 435 KAPUNDA MARBLE AND BUILDING CO., KAPUNDA—Marble monument and collection of marble, manufactured and in the rough.
- 436 HANSON & EVANS—Marble and granite monuments and headstones of various designs.

- 437 A. SIMPSON & SON, GAWLER-PLACE—Galvanized ironware, sheep and cattle trough, iron gates, well buckets, &c.
- 438 JOHN ALLEN, WILLUNGA—Slates and flagging.
- 439 MOUNT GAMBIER COURT—Blocks of stone.
- 440 MELLOR BROS., FRANKLIN-STREET, ADELAIDE—Agricultural implements, fences, gates, windmills, pumps, &c.
- 441 HARRIS, SCARFE, & CO., GAWLER-PLACE—Windmills, pumps, &c.
- 442 E. J. PATERNOSTER, SALISBURY—Patent all iron windmill, invented and made at Salisbury, S.A., erected with pump, &c., and self regulating appliances.
- 443 J. H. HORWOOD & CO., CURRIE-STREET—The Adelaide windmill, and all iron Australian windmill, pumps, boring tools, &c.
- 444 J. HOOKER, KILKENNY—Portable steam pump.
- 445 J. MARTIN & CO., GAWLER—Special shed built, containing the display of their engineering and agricultural machinery.
- 446 G. E. FULTON & CO., KILKENNY—Trophy of cast-iron pipes and water-works fittings, from their foundry, Kilkenny.
- 447 FRED. F. BASSETT, EXCHANGE, CITY—Slates and flagging.
- 448 CHARLES GRANT, MURRAY BRIDGE—One building stone, partly dressed and partly rough.
- 449 THOS. KELLY, MOUNT GAMBIER—Dressed stone.
- 450 THOS. MARTIN, WILLUNGA—Flagging and roofing slates.
- 451 GAWLER LIME AND PRODUCE CO., GAWLER, AND 86, WAYMOUTH-STREET, CITY—Specimens of lime and limestone; burnt at Gawler from stone very plentiful to the north of Gawler, and only from 8in. to 24in. from the surface.

MACHINERY HALL.

- 452 R. LINDSAY, CARRON IRON WORKS, PORT ADELAIDE—Pair of compound surface-condensing engines, with 11in. by 21in. cylinders, 12in. stroke; also steel return-tube boiler, 8ft. long, 6ft. 9in. drain, with two furnaces, each 6ft. by 2ft. 2in.
- 453 JAS. HOOKER, KILKENNY—Cold-iron saw, drilling, squaring, and boring machine.
- 454 F. H. CLARK & SONS—Collection of well boring tools, &c.

ARMAMENT HALL.

- 455 PROTECTOR OF ABORIGINES, E. L. HAMILTON, ADELAIDE—Collection of native weapons.
- 456 INSPECTOR BESLEY, PORT AUGUSTA—Collection of native weapons.
- 457 POINT MCLEAY MISSION STATION—Collection of native weapons.
- 458 W. B. WILKINSON, PIRIE-STREET, ADELAIDE—Collection of native weapons.
- 459 HON. J. L. PARSONS, GOVERNMENT RESIDENT, NORTHERN TERRITORY—Collection of native weapons.
- 460 DAVID LINDSAY, NORTH ADELAIDE—Collection of native weapons.
- 461 J. W. JONES, CONSERVATOR OF WATER—Collection of native weapons.
- 462 ADELAIDE PUBLIC LIBRARY AND MUSEUM, NORTH-TERRACE—Full-sized model of blackfellow.

- 463 REV. GEO. TAPLIN, POINT MCLEAY MISSION STATION—Three photographs of aboriginals.
- 464 SIR SAMUEL DAVENPORT, K.C.M.G., BRAUMONT—Oil painting (cortoboree).
- 465 ROYAL COMMISSION FOR SOUTH AUSTRALIA, ADELAIDE—Collection of Photographs.
- 466 • MARINE BOARD OF SOUTH AUSTRALIA AND H.M. DOCKYARD, GLANVILLE—Castings; patterns in wood for castings; plans and photographs connected with deepening and lighthouse operations; screw moorings and models of same; propellers, &c.
- 467 LOCOMOTIVE ENGINEER, LOCO. WORKSHOPS, ADELAIDE—Stamped forgings of various descriptions, railway carriage made in the Loco. workshops.
- 468 W. J. NOTT, BLANCHETOWN, RIVER MURRAY—Model of windmill and pump.
- 469 JAS. MILLER, WEST-TERRACE NORTH—Working model of apparatus for preventing collision between vessels at sea during the darkness between sunset and sunrise; also a very small model of shaft coupling.
- 470 HUGH ALEXANDER, BIRKENHEAD—Model of s.s. Adelaide.
- 471 A. STIDSTON, WOODVILLE—Patent Marker Safety Signal.
- 472 M. WIGHTMAN, H.M. DOCKYARD, GLANVILLE—Model of sloop, showing safety steering apparatus.
- 473 J. FRASER, HEATH-STREET, BIRKENHEAD—Three models of yachts.
- 474 G. H. WALKER, BIRKENHEAD—Half model of full-rigged ship.
- 475 GOVERNMENT OF SOUTH AUSTRALIA—Collection of economic products from India.
- 476 A. SIMPSON & SON, GAWLER-PLACE—Submarine torpedo, made in the colony.
- 477 HON. D. MURRAY, MEDINDIE—Four shields of arms.
- 478 C. E. O. SMYTH, SUPERINTENDENT OF PUBLIC BUILDINGS—Collection of weapons.

NORTHERN TERRITORY COURT.

- 1 **H.M. Government**—Minister for the Northern Territory, 500 ounces gold.
- 2 **Olaf Jensen, J.P.**—Specimens of auriferous quartz from the Eleanor reef, covering 20 acres; the Kohinoor reef, 13 acres; and the Telegraph reef, 20 acres. Crushing plant, a 20-head battery. Yield of gold up to date equal to £33,000.
- 3 **Port Darwin Gold Mining Company (Limited), per Mr. Albert Hanns, Manager**—Specimens of auriferous pyrites from the Howley Mine.
- 4 **W. K. Griffiths**—Specimens of auriferous quartz from No. 3 South Union, No. 2 South Union, No. 2 North Union, No. 12 North Union; specimens from Princess Louise, Yam Creek, and from Pioneer claim, Yam Creek.
- 5 **Grove Hill Gold Mining Co.**—Specimens of auriferous quartz.
- 6 **George L. Barrett**—Specimens of silver ore from claim near Mount Shoobridge.
- 7 **Evelleen Silver Mining Company (Limited)**—Specimens of silver ore from the company's mine near "Hauschildt's rush;" also samples of "bullion," reduced from the crude ore.
- 8 **Adam Johns**—Specimens of galena from the McKinlay, south of Flora Bell mine.
- 9 **Littlefield and Clarke**—Specimens of galena and carbonate of silver, newly discovered at Selwyn, near the township of Burrundie:—

1	Ore from lode	8 feet wide.
2	" "	20 "
3	" "	3 "
- 10 **James Benjamin Robinson**—Specimens of galena and carbonate of silver, from the "Flora Bell" claim, 480 acres, near the "Twelve Mile," on the McKinlay river.
- 11 **V. L. Solomon**—Specimens of silver ore from claim, 160 acres, on the Union.
- 12 **George L. Barrett**—Large block of tin ore from Mount Shoobridge.
- 13 **Cruikshank and Barrett**—Specimens of tin ore from Mount Shoobridge.
- 14 **Adam Johns**—Specimens of tin ore from Mount Shoobridge.
- 15 **Kingston and Christie**—Specimens of tin ore from claims on Finniass river (644 acres.)
- 16 **Mount Wells N.T. Tin Mining Company (Limited), Adelaide, per Mr. George Deane, Manager**—Specimens of tin ore from No. 1 shaft, 25ft. level, width of lode 3ft. 6in., together with specimens from six other portions of the company's land.
- 17 **Port Darwin Tin Company (Limited), Mount Wells**—Specimens of tin ore.
- 18 **V. L. Solomon**—Specimens of tin ore from Mount Shoobridge. Area of claim, 480 acres.
- 19 **Daly River Copper Company (Limited)**—Specimens of copper ore from the company's claim on the Daly river. Area of claim, 320 acres.
- 20 **V. L. Solomon**—Specimens of copper, grey ore, and carbonate, from the Wheal Danks Mine, Daly River. Main shaft at 120ft. level, lode 6ft. wide. Area of claim, 960 acres.
- 21 **V. L. Solomon**—Specimens of copper ore from Howley Mine, depth 20ft., lode 2ft. wide. Area, 80 acres.

EXHIBITS—NORTHERN TERRITORY COURT. 253

- 22 **A. E. Hawson, T. C. Wollaston, and E. Pearson.**—Gem stones from the interior of the Territory.
- 23 **Frederick E. Becker**—Specimens of coral from Fannie Bay. (These were all broken to pieces on the voyage.)
- 24 **W. T. Bednall, Adelaide**—North Australian shells, collected by the exhibitor at Port Darwin and its vicinity.
- 25 **Paul Foelsche**—

Forty-eight photographic views of scenery and buildings in the Northern Territory.

A collection of native weapons and handiwork, native canoe, &c.

- 26 **Maurice Holtze, Curator of the Government Gardens**—Samples of agricultural produce from the Government Experimental Gardens, near Palmerston :—

1	Maize, caragua.	29	Peanuts.
2	" Blount's prolific.	30	Teal seed.
3	" yellow horsetooth.	31	Sunflower seed.
4	" golden drop.	32	Castor oil beans.
5	" Brown King Phillip.	33	Jatropha curcas seeds.
6	" Papagay.	34	Calophyllum nuts.
7	Rice.	35	Arrowroot.
8	Millet.	36	Yam starch.
9	Sorghum.	37	Sweet potato starch.
10	Horse gram.	38	Tous le mois.
11	Dhol.	39	Mandiacio Janipha.
12	Rice.	40	Mandiacio Aipi.
13	Bearded millet.	41	Tapioca.
14	Sorghum.	42	Sugarcane, "Creole."
15	Teosinte.	43	Peanut oil.
16	Arrowroot tubers.	44	Sesame oil.
17	Cassava tubers.	45	Castor oil.
18	Yams.	46	Cotton oil.
19	Yams, Dioscorea species.	47	Egyptian cotton.
20	Sweet potatoes.	48	Upland cotton.
21	Amorphophallum roots.	49	Sea Island cotton.
22	Tacca roots.	50	Manila hemp.
23	Canna esculenta roots	51	Banana fibre.
24	Caladium esculentum.	52	Pineapple fibre.
25	Ginger.	53	Sun hemp plants.
26	Tobacco leaf.	54	Babool bark.
27	Ginger, dry.	55	Mangrove bark.
28	Turmeric.		

- 27 **Maurice Holtze, Curator of the Government Gardens**—A collection of indigenous woods of the Northern Territory, obtained from the neighborhood of Palmerston :—

1	Erythrophoeanem Labou-cheri.	14	Zanthoxylum parviflorum.
2	Acacia auriculiformis.	15	Alstonia verticilliosa.
3	Melaluca leucadendron.	16	Peltophorum ferrugineum.
4	Mimusops parviflora.	17	Undefined.
5	Carapa Molucensis.	18	Albizia procera.
6	Avicenia officinalis.	19	Eugenia species.
7	Ægiceras majus.	20	Polyalthia Holtzeana.
8	Metrosideros paradoxa.	21	Ficus glomerata.
9	Terminalia species.	22	Tristania Holtzeana.
10	Adenanthra pavonia.	23	Undefined.
11	Eucalyptus tetrodonta.	24	Elaeocarpus species.
12	Bombax Malabaricum.	25	Eucalyptus miniata.
13	Canarium Australasicum.	26	Careya Australis.
		27	Buchanania augustifolia.

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|----|---------------------------------|----|--------------------------------|
| 28 | <i>Casuarina equisetifolia.</i> | 40 | Undefined. |
| 29 | <i>Sideroxylon</i> species. | 41 | <i>Ficus</i> species. |
| 30 | Undefined. | 42 | <i>Calophyllum</i> species. |
| 31 | <i>Saccopetulum</i> species. | 43 | <i>Sarcocephalus cordatus.</i> |
| 32 | <i>Myristica insipida.</i> | 44 | <i>Eugenia Holtzeana</i> |
| 33 | <i>Frenela intratropica.</i> | 45 | <i>Gmelina macrophylla.</i> |
| 34 | <i>Randia densiflora.</i> | 46 | <i>Eugenia</i> species. |
| 35 | <i>Greivia multiflora.</i> | 47 | <i>Eudonia ramiflora.</i> |
| 36 | <i>Sideroxylon</i> species. | 48 | <i>Terminalia platyphylla.</i> |
| 37 | <i>Terminalia</i> species. | 49 | <i>Timonius Rumphii.</i> |
| 38 | <i>Calophyllum</i> species. | 50 | <i>Terminalia microcarpa.</i> |
| 39 | <i>Sterculia quadrifida.</i> | | |
- 28 Mrs. M. Holtze—Preserved fruits, &c.:—
- 1 Preserved ginger.
 - 2 “ bananas.
 - 3 “ papaws.
 - 4 “ pineapples.
 - 5 Pickled ginger.
 - 6 “ capsicums.
 - 7 Tomato sauce.
- 29 Rev. H. Kempe—Samples of produce grown at Mission Station, Hermannsburg, on the Finke River:—
- Potatoes.
 - Maize.
 - Imphee.
 - Sorghum vulgare.*
 - White French millet.
 - Kaffircorn.
 - Spelt (German wheat.)
 - Cyperus esculentus.*
 - Rye.
 - White mustard.
 - Leindotter (gold of pleasure.)
- 30 John George Knight—Specimens of rocks and building material:—
- 1 Ferruginous earth, usually the top soil about Palmerston.
 - 2 Conglomerate, generally about 2ft. under top soil, but often cropping out of the surface.
 - 3 Stone from Palmerston.
 - 4 Stone, similar but softer than No. 3, often eaten by the aborigines to allay their hunger.
 - 5 Stone from Fannie Bay, four miles from Palmerston, used for building purposes.
 - 6 Micaceous clay slate, underlying all the above.
 - 7 White clay from Fannie Bay.
 - 8 Brick clay from Fannie Bay.
 - 9 Sample of shells used for making lime, found in mounds on dry land.
 - 10 Sample of lime produced from the above shell.
 - 11 Sample of bricks made fifty years ago by the first military settlers at Port Essington.
 - 12 Sample of concrete used in building Mr. Knight's house—See photograph.
- 31 Maurice Holtze—
- 1 Samples of agricultural soil from Daly River.
 - 2 Samples of agricultural soil from Adelaide River.
 - 3 Samples of agricultural soil from Shoal Bay, twelve miles from Palmerston.

- 4 Samples of agricultural soil from Government Gardens, two and a-half miles from Palmerston.
 - 5 Samples of agricultural soil from The Jungle, eight miles from Palmerston.
 - 32 **John George Knight**—Samples of grasses growing in the neighborhood of Palmerston :—
 - 1 Acclimatized grass, spreading rapidly.
 - 2 “ “ good fodder.
 - 3 Couch grass, which springs up wherever land is cleared, and is rapidly spreading over the country. A wild Buffalo grass usually accompanies the “couch,” and the struggle for mastery is yet undecided.
 - 4 “Wire weed,” believed to be adapted for the manufacture of paper.
 - 5 Samples of rice (Paddy) grown near Palmerston.
 - 6 Sample of dressed rice.

Memo.—The cultivation of rice is just being started by the Chinese, and is likely to be carried out on a large scale.
 - 33 **Mrs. Kelsey**—Two cases of butterflies and insects.
 - 34 **Lands Department, Palmerston**—Maps and plans explanatory of the settlement of the Northern Territory, including geological sketch section and report by the Rev. J. Tenison Woods, F.G.S.
 - 35 **Mrs. T. Kennedy Pater**—Two cases of butterflies, moths, &c.
 - 36 **Mrs. T. Ward, Adelaide**—Two cases of butterflies, moths, &c.
 - 37 **Oscar F. C. Reichardt, Land Surveyor, Palmerston**—Plan showing all the mineral country at present prospected, and the sites of the various mineral workings, prepared expressly for this Exhibition.
 - 38 **George Byland**—Specimen of sweet potato, originally 10lbs. in weight, grown at Rum Jungle.
 - 39 **Alfred Searcy**—

Samples of red and black trepang, used by the Chinese as an article of luxury.

Sample of tortoiseshell, from the sea coast.
 - 40 **Alfred Searcy, Sub-Collector of Customs, Palmerston**—Statistics of imports and exports, Customs revenue, &c.
 - 41 **B. H. Pulleine**—A collection of skins of birds belonging to the Northern Territory.
 - 42 **J. G. Knight**—Ball showing the quantity of gold obtained in the Northern Territory, computed at 8 tons, forming a sphere 36·6 inches in diameter, measuring 14·855 cubic feet, and valued at £1,012,666 13s. 4d.
 - 43 **V. L. Solomon**—Show case containing specimens of pearl and other shells, coralline, and other marine curiosities.
 - 44 **David Lindsay**—A collection of native weapons, &c.
 - 45 **Eveleen Silver Mining Company, Limited**—One hundred bars of bullion weighing 3 tons 13cwt. 2qrs., and block of silver ore, weighing 5 cwt.
 - 46 **Olaf Jensen**—Cake of retorted gold weighing 1,652ozs. 10dwts., obtained from crushing 783 tons stone from Eleanor Reef, Pine Creek.
 - 47 **B. D. Beresford**—Tortoiseshell.
- Large bean, similar to that of Queensland, used for matchboxes.

CONCERT HALL.

The following architectural drawings have been added to the exhibits since the compilation of the catalogue :—

- 7A. Congregational Church, Glenelg, by Garlick & Son.
- 17. Figure in niche, St. Barnabas Theological College, by Garlick & Son.
- 18. West facade of design, cathedral, by A. J. Murray.
- 19. Original design of Exhibition, Public Works Department.
- 20. Premises of E. S. Wigg & Son, by A. J. Murray.
- 21. Plan of farm, by A. J. Murray.
- 22. St. John's, Adelaide, by Mr. Garlick Holwell.
- 23. Second premiated design, church, Marden, by Henderson & Marryat.
- 24. Executed design, church, Marden, by Henderson & Marryat.

A Leatherwork cornice, Mrs. Bower, Woodville.

B Leatherwork cornice, Mrs. Bower, Woodville.

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ABBREVIATIONS.

M.B. Main Building	E.A. Eastern Annex.	B. Basement.	N.A. Northern Annex.
C.H. Concert Hall.	A.I.H. Agricultural Implement Hall	M.H. Machinery Hall.	W.G. Western Gallery.
A.G. Art Gallery.	O. Outside.	N.T.C. Northern Territory Court.	

Name.	Department.	Section.	Class.	Exhibits.	No.	Locality.
<i>Advertiser, Express, and Chronicle</i> ..	—	—	—	Enquiry office, &c.	224	E.A.
Adams, E. A., jun.	VI.	K	672	Fancy cooperage	233	B.
Andrews, Wm.	II.	M	297	Rubber stamps, &c.	53	M.B.
Adcock, T.	IV.	B	407	Water color	73	C.H.
Adelaide Broom Factory	II.	M	298	Brushware	360	N.A.
Aerated Bread Company	VI.	C	623	Biscuit trophy	80	M.B.
Ashton, Jas.	IV.	B	406	Oil paintings	22, 30, 42, 55	C.H.
Adelaide Aerated Water & Brewing Company	VI.	D	629	Liqueur	291	B.
Adelaide Aerated Water & Brewing Company	VI.	D	629	Aerated waters, &c.	44	M.B.
Adelaide Aerated Water & Brewing Company	VI.	D	628	Spirits	283	B.
Adelaide Aerated Water & Brewing Company	VI.	D	629	Cordials	311	B.
Adelaide Aerated Water & Brewing Company	VI.	D	629	Aerated waters	312	B.
Adelaide Aerated Water & Brewing Company	VI.	D	629	Bitters	327	B.
Adelaide Aerated Water & Brewing Company	VI.	D	627	Ciders	329	B.

Austin, J. B.	I.	104	Rocks, &c.	E.A.	176
Amey, Miss	A	405	Leatherwork	E.A.	136
Allen, J.	A	107	Slates, &c.	O.	438
Angas, J. H.	G	£41	Wool, &c.	N.A.	397
Angas, J. H.	—	—	181, Old Colonists' Court	M.B.	34
Adelaide Chemical Works	—	200	Chemicals	N.A.	391
Adelaide Boot Factory	H	262	Boots and shoes	N.A.	217
Alexander, H.	J	589	Model of steamship	E.A.	470
Areas Photo. Company	D	415	Photographs	Armoury	18
Adelaide Crystal Ice Company	C	621	Rice starch	C.H.	50
Angaston District	—	—	Angaston Court	M.B.	67
Adelaide Milling Company, Limited	C	619	Flour	N.A.	384
Addison, H. M.	A	103	Antimony, &c.	E.A.	170
Anson, Miss E.	B	406	Oil paintings	C.H.	25, 33
Aird, Miss B. E.	F	429	Mantel drape inlaid with water color paintings	M.B., W.G.	12
Ayers, Sir Henry	—	—	10 to 14, Old Colonists' Court	M.B.	34
Adamson, J. B.	—	—	68, Old Colonists' Court	M.B.	34
Adams	—	—	166, Old Colonists' Court	M.B.	34
Austin, W.	B	406	Water color	C.H.	98
Agricultural Products	B	608	Agricultural products	N.A.	406
Adamson, Mrs. A.	E	421	Tea cosy, &c.	E.A.	214
Adelaide Co-operative Coopers Co. (Henderson, Manager)	K	672	Cooperage	B.	231
Auldana Vineyard (W. P. Auld)	D	625	Wines	B.	261
Adelaide Public Library and Museum	A	400	Model of Aboriginal	Armoury	462
B					
Barnes, J. W.	E	421	Models	M.B.	42
Beare, E., & Co.	D	228	Window blinds	E.A.	152
Burton, W.	M	681	Horse shoes	N.A.	363
Billiatt, A. E.	B	406	Oil paintings	C.H.	21, 113
Burford & Son, W. H.	A	201	Candles, &c.	M.B.	45
Burford & Son, W. H.	A	201	Soaps, &c.	N.A.	394
Burford & Son, W. H.	A	201	Soap-making	N.A.	373
Birks, J. N.	D	629	Hop bitters	E.A.	150
Brooks, F.	D	293	Venetian blinds	E A	203

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
A						
Barlow & Son	II.	N	303	Carrages	237	B.
Brunkhorst, A. L.	II.	H	363	Jewellery	108	M.B.
Brunell, Jas.	IV.	C	427	Embossed glass, &c.	219	E.A.
Brunell, Jas.	IV.	B	406	Oil painting	102	C.H.
Bagshaw, T. S.	VI.	K	671	Machinery	356	N.A.
Boettger, Otto	III.	B	368	Scientific instruments, &c.	83	M.B.
Buring, H.	VI.	D	625	Wines	74	M.B.
Billiat	—	—	—	156 to 163, Old Colonists' Court	34	M.B.
Bickford & Son	VI.	D	629	Bitters	396	B.
Bickford & Son	VI.	D	628	Spirits	282	B.
Bickford & Son	VI.	D	629	Liqueurs	390	B.
Bickford & Son	VI.	D	639	Cordials	310	B.
Bickford & Son	VI.	D	639	Aerated waters	317	B.
Barrett, G. L.	I.	A	102	Tin ore	12	N.T.C.
Becker, T. E.	I.	A	102	Coral	23	N.T.C.
Bednell, W. T.	VII.	F	639	Shells	24	N.T.C.
Bailey, Ettie, Miss	IV.	B	406	Oil painting	104	C.H.
Bailey, Ettie, Miss	IV.	B	407	Water color	195	C.H.
Barnard, G. L.	II.	A	201	Oils	67	M.B.
Bishop & Co.	II.	C	214	Glass bottles, &c.	168	E.A.
Broad, A. S.	IV.	B	406	Oil painting	3	C.H.
Broad, A. S.	IV.	B	407	Water colors	74, 83, 84, 91,	C.H.
Bourne, G. R. W.	IV.	B	406	Oil painting	96, 96, 97	C.H.
Broad, Miss E. F.	IV.	B	429	Tapestry	1	C.H.
Broad, Miss E. F.	IV.	B	406	Hand-painted mirror	3	M.B.
Broad, Miss E. F.	IV.	B	406	Oil painting	16	C.H.
Barth, Carl	II.	L	296	Birdcages, &c.	67	N.A.
Bennett, J.	II.	L	294	Bells, nuts, &c.	357	N.A.
Best, S.	II.	H	264	Riveted glassware, &c.	365	N.A.
Best, G. F.	II.	H	264	Riveted glassware, &c.	31	M.B.
Brice, Henry	VI.	K	688	Agricultural implement	31a	M.B.
Blake, Walter	VI.	K	689, 675	Agricultural implements	—	A.I.H.
					417	A.I.H.

Blake, Joseph	II.	N	305	Wagon	418	A.I.H.
Borrow & Haycroft	VI.	A	603	Barb, &c.	248	B.
Bassett, F. F.	I.	A	107	Slates	447	O.
Bailey, H. J., & Co.	II.	H	269	Children and ladies' clothing	205	E.A.
Brown, S.	IV.	B	406	Oil paintings	51	C.H.
Bischoff, G. W.	IV.	B	406	Oil paintings	7, 24	C.H.
Brasill, Miss M.	V.	F	429	Tapestry	4	C.H.
Beresford, R. D.	VII.	F	639	Tortoise shell, &c.	47	N.T.C.
Burchell, F. N.	VI.	M	679	Designs and plans of irrigation on River Murray	8a	M.B.
Barlow Bros.	II.	N	303	Carriages	240	B.
Brown, J. E., F.L.S.	IV.VI.	C, A	413, 607, 606, 604, 600	Collection of lithographs, collection of woods, veneered woods, collection of seeds, gums, barks, railway sleepers, &c.	19	M.B.
Brown, H. Y. L., F.L.S.	—	—	—	Government Geologist's Court	167	E.A.
Brown, H. Y. L., F.L.S.	—	—	—	Government Geologist's Court	168	E.A.
Brown, H. Y. L., F.L.S.	—	—	—	Government Geologist's Court	168a	E.A.
Brown, H. Y. L., F.L.S.	—	—	—	Government Geologist's Court	168b	E.A.
Brown, H. Y. L., F.L.S.	—	—	—	Government Geologist's Court	169	E.A.
Bedley, B. C.	II.	I	282	Native weapons	4f6	Armoury
Beeghrole & Johnson	VI.	O	619	Malt	408	N.A.
Brunin, C.	IV.	A	400	Statutes	—	—
Barber, Colonel, Mrs.	I.	A	103	Old Colonists' Court	34	M.B.
Barton, W. C.	IV.	B	406	Manganese	171	E.A.
Benham, Miss A. M.	IV.	B	406	Oil paintings	31, 34, 40	C.H.
Benda, F.	VI.	D	415	Photographs	53	C.H.
Beythian, I.	I.	A	103	Silver ore	11	C.H.
Barrett, G. L.	—	—	—	—	6	N.T.C.
O						
Chambers and Blades	VI.	D	626	Beer	295	B.
Clarke, Geo.	III.	B	361	Clock	103	M.B.
Chambers, A. O.	II.	D	226	Washing machines, &c.	354	N.A.
City and Suburban Brick Company	II.	B	206	Bricks, &c.	165	E.A.
Colton, J., & Co.	—	N	306	Harness, saddlery, &c.	123	E.A.

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Name.	Department.	Section.	Class.	Exhibits.	No.	Locality.
Cameron, W., & Co.	II.	A	205A	Tobacco, &c.	157	E.A.
Calder & Balfour	VI.	C	623	Biscuit trophy	75	M.B.
Cameron, R., & Sons	VI.	K	669	Agricultural implements	428	A.I.H.
Coleman & May	VI.	E	633	Honey, &c.	105	M.B.
Carey, Page, & Co.	II.	A	272	Samples of printing	337	N.A.
Cross, Chas.	II.	A	200	Indigestion drops	164	E.A.
Clayton, H.	IV.	B	407	Water color	66	C.H.
Clayton, H.	IV.	B	406	Portraits	118, 118a	A.G.
Clayton, H.	VI.	B	406	Oil paintings	17, 27, 29, 44	C.H.
Clark Bros.	II.	N	303	Carriages.	239	B.
Clark Bros.	II.	N	303	Buggy	376	N.A.
Churchet, Miss A. P.	IV.	F	429	Tapestry	6	C.H.
Crowder & Co.	VI.	D	629	Liquors	288	B.
Crowder & Co.	VI.	D	629	Aerated waters	76	M.B.
Crowder & Co.	VI.	D	628	Spirits	279	B.
Crowder & Co.	VI.	D	629	Magnesia	332	B.
Crowder & Co.	VI.	D	629	Ciders	328	B.
Crowder & Co.	VI.	D	629	Cordials	307	B.
Crowder & Co.	VI.	D	629	Aerated water	315	B.
Crowder & Co.	VI.	D	629	Bitters	323	B.
Cox & Witherick	II.	N	303	Buggy	286	B.
Chance & Co.	VI.	C	620	Jama, &c.	155	E.A.
Cave, W. R., & Co.	VI.	F	635	Ostrich feathers and eggs	7	M.B.
Cawthorne & Co.	III.	B	406, 409	Hand-painted plaques, &c.	4	M.B.
Cawthorne & Co.	III.	D	364	Musio	342	N.A.
Cornish, J., & Co.	VI.	A	600	Bark	247	B.
Cleland, Dr. W. L.	II.	G	249	Silk cocoons	111	M.B.
Cairstairs & Coxel	VI.	D	629	Cordials	304	B.
Cairstairs & Coxel	VI.	D	629	Cordials, &c.	243	B.
Cairstairs & Coxel	VI.	D	628	Spirits	276	B.
Cairstairs & Coxel	VI.	D	629	Bitters	320	B.
Conrad, L.	VI.	E	630, 631	Preserved meats, &c.	366	N.A.
Cole, E.	II.	B	206	Statues	375	N.A.

Crozier, Hon. J.	VI.	D	625	Wines	271	B.
Campbell, Miss Laura	VI.	A	711	Wax fruits	99	M.B.
Cole, G. W.	—	—	—	No. 136, 180, Old Colonists' Court	34	M.B.
Caire, —.	—	—	—	No. 142, 143, Old Colonists' Court	34	M.B.
Customs Department	—	—	—	172 to 177, Old Colonists' Court	34	M.B.
Cowling, Captain	I.	A	102	Copper ore	183	E.A.
Crabb, R. S.	I.	A	103	Malachite	185	E.A.
Carruthers, W.	IV.	B	406	Oil painting	227	E.A.
Carruthers, W.	IV.	B	406	Oil painting	174	C.H.
Clark, Francis, & Sons	VI.	K	671	Gas engine, &c.	371	N.A.
Clark, Francis, & Sons	VI.	K	671	Wall-boring tools	454	M.B.
Crockshank & Barrett	I	A	103	Tin ore	13	N.T.C.
D						
Dowie, A.	II.	H	262	Boots and shoes	215	E.A.
Dowie, A.	VI.	E	634	Leather, &c.	216	E.A.
Durves, T.	IV.	D	415	Photograph	82	M.B.
Deland & Co.	VI.	C	619	Flour	378	N.A.
Dunn, John, & Co.	VI.	C	619	Flour, biscuits, &c.	386	N.A.
Donoghby & Sons	II.	M	299	Ropes	389	N.A.
Duncan & Fraser	II.	N	303	Carriages	236	B.
Duncan & Fraser	II.	D	217	Show deck and stand	241	B.
Duncan & Fraser	II.	N	304	Tramcar and buggy	407	N.A.
Duffield, D. W.	IV.	D	415	Photographs	5, 6, 7, 12, 13, 14	C.H.
Dalwood, W. L.	I.	L	109	Asbestos	197	E.A.
Dawson, A.	II.	L	305	Wagon	421	Al.H.
Dobbie, A. W., & Co.	V.	L	533	Sewing machines	368	N.A.
Dutch, C. E.	VI.	K	669	Thrashing machine, &c.	432	O.
Dallas & Co., J. D.	II.	D	228	Blinds	153	E.A.
Dooleys, G. P., & Co.	IV.	H	259	Shirts	204	E.A.
Denning, Miss M.	IV.	F	429	Miscellaneous objects of art	4, 5, 6, 7	C.H.
Davey, E., & Sons	—	—	—	Angoston Court	70	M.B.
Davenport, Sir Samuel	IV.	D	625	Wines	262	B.
Davenport, Sir Samuel	I.	A	103	Iron ore, &c.	189	E.A.

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
D						
Davenport, Sir Samuel	VI.	B	406	Oil painting	464	Armoury
Danker, W. G.	VI.	D	629	Beer	302	B.
Danker, W. G.	VI.	D	629	Aerated waters	318	B.
Dutton, T. H.	VI.	G	641	Wool	400	N.A.
Daly River Copper Mining	I.	A	406	Copper ore	19	N.T.C.
Degenhardt, G.	—	—	—	164, Old Colonists' Court	34	M.B.
Drewett, M. E.	IV.	B	—	Oil painting	69	C.H.
Dobell, Mrs. S.	IV.	F	429	Tapestry	5	C.H.
E						
Elliott, J. W.	IV.	D	415	Photographs	15, 16, 17	C.H.
Everett, Jos. P.	II.	H	261	Hats, &c.	210	E.A.
Eraus, H. A.	VI.	C	620	Dried fruits	104	M.B.
Etkins, W. E.	II.	J	276	Guns, &c.	133	E.A.
Eraus, W. P.	II.	D	217	Furniture	27	M.B.
Earle Bros.	IV.	A	405	Bone carving	138	E.A.
Eam, A.	IV.	B	406	Water-color paintings	38, 39, 81, 92	C.H.
Engineer-in-Chief	IV.	D	415	Photographs	1, 2, 3, 4	C.H.
Elder, Sir Thomas	IV.	D	625	Wines	272	B.
Eveleen Silver Mining Co.	I.	A	103	Silver ore	7	N.T.C.
Eveleen Silver Mining Co.	I.	A	103	Bars of bullion	45	N.T.C.
F						
Fotheringham, G.	II.	D	226	Boiler	353	N.A.
Fotheringham, D. & R. J.	VI.	D	629	Aerated waters	316	B.
Fotheringham, D. & R. J.	VI.	D	629	Cordials	309	B.
Fotheringham, D. & R. J.	VI.	D	629	Cordials, &c.	244	B.
Fotheringham, D. & R. J.	VI.	D	628	Spirits	281	B.
Fotheringham, D. & R. J.	VI.	D	629	Bitters	325	B.
Fotheringham, D. & R. J.	VI.	D	620	Sauces	334	B.
Finck, C.	VI.	C	619	Flour	379	N.A.
Fitzpatrick, Miss M.	IV.	A	405	Carving in cuttle fish	100	M.B.

Forwood, Downs, & Co.	V.	L	593	Ironwork, winchpress	W.A.	350
Faulding & Co.	II.	A	200	Pharmaceutical preparations	E.A.	124
Fraser, J.	V.	I	589	Models	Armoury	473
Ferneley, W. R.	IV.	C	406	Oil painting	C.H.	45
Ferneley, Miss W.	IV.	F	429	Tapestry	C.H.	14
Fulton, G. E., & Co.	V.	K	592	Castings, &c.	E.A.	209
Fulton, G. E. & Co.	V.	K	592	Trophy of castiron pipes	O.	446
Fry, Mrs. H.	II.	A	200	Ointment	E.A.	140
Fowler, D. & J.	VI., II.	B, C, A, K	624, 200, 623 204, 614, 283	Confectionery, &c.	E.A.	128
Fouraut, J. H.	VI.	D	625	Champagne	B.	262
Fourache, Paul	IV.	D	415	Photographs	N.T.C.	25
Field, Miss L.	IV.	B	408	Wall decorations	M.B.	15
Flint, —	—	—	136 to 140	Old Colonists' Court	M.B.	24
Fivesab, Miss	IV.	B	406	Oil painting	C.H.	12
G						
Garlick & Son	IV.	E	419	Architectural drawings	C.H.	1, 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 16 79, 87, 88, 89, 90 43, 62, 65, 77
Gow, John.	IV.	B	407	Water colors	C.H.	448
Gold, W. K.	IV.	B	407	Water colors	C.H.	145
Grant, Chas.	I.	A	107	Building stone	O.	134
Gray, Harry	II.	D	219	Pier glass	E.A.	461
Gaetjens, F.	II.	D	217	Fretwork	O.	293
Gawler Lime Co.	I.	A	108	Limestone	B.	358
Gray, G. E.	VI.	D	626	Beer	N.A.	349
Gardner, J.	VI.	A	641	Compositions	N.A.	218
Gray Bros.	V.	H	568	Axles, &c.	E.A.	232
Green, J. J., & Co.	VI.	E	634	Leather, &c.	B.	131
Gerner, J. F., & Co.	VI.	K	672A	Cooperage	E.A.	242
Gay, P.	II.	D	217	Billiard table	B.	298
Goodier, Wm., & Co.	VI.	D	626	Bottled ales, &c.	N.A.	414
Goodier, Wm., & Co.	VI.	D	626	Bottle beer	Armoury	459
Gray, W. F., & Co.	II.	L	295	Galvanized iron	M.B.	5
Govt. Resident (Hon. J. L. Parsons)	II.	I	282	Native weapons		
Govt. Printer (E. Spiller)	II.	I	271	Book binding and lithograph printing		

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G	Name.	Department.	Section.	Class.	Exhibits.	No.	Locality.
Gillis, O.	—	—	—	141, Old Colonists' Court	34	M.B.
Garnon, W.	—	—	—	166, Old Colonists' Court	34	M.B.
Gilbert, Wm.	VI.	D	626	Wines	264	B.
Gilbert, Wm.	VI.	D	628	Spirits	274	B.
Gill, H. P.	—	—	—	Art collection	121	E.G.
Goldsmith, E.	IV.	B	496	Oil paintings	4, 71	C.H.
Goldsmith, E.	IV.	B	407	Water colours	70, 76, 99	C.H.
Griffiths, W. K.	I.	A	101	Quartz specimens	4	N.T.C.
Grove Hill Gold Mining Co.	I.	A	101	Quartz specimens	5	N.T.C.
Government of South Australia	—	—	—	Economic products of India	476	Armoury
H							
Hage, T. C., & Co.	II., IV.	B, C, A	614, 623, 200	Coffee, cocos, &c.	387	N.A.
Hardy, Thos.	VI.	D	629	Liqueurs	284	B.
Hardy, Thos.	VI.	D	628	Spirits	273	B.
Hardy, Thos.	VI. II.	DA	626, 201	Wines, vat, oils, olives, &c.	87	M.B.
Hardy, Thos.	VI.	D	625	Wines	267	B.
Hedde, W. H.	IV.	A	401	Carved marble picture frame	13, 14	M.B.
Hammer & Co.	IV.	D	415	Photographs	8	C.H.
Hammer & Co.	IV.	D	416	Photographs	11	M.B.
Hammer & Co.	—	—	—	No. 1, Old Colonists' Court	34	M.B.
Hammer & Co.	IV.	D	415	Photographs, &c.	221	E.A.
Hood, John	IV.	D	415	Photographs	69	M.B.
Harrold Bros.	V.	A	606	Gold cradle	362	N.A.
Harris, Scarfe, & Co.	VI.	K	670	Woolpress, &c.	369	N.A.
Harris, Scarfe, & Co.	VI.	K	671	Windmills, &c.	441	O.
Heatheray Bros.	VI.	K	667	Agricultural implements	422	A.I.H.
Henderson & Co.	VI.	C	623	Confectionery	372	N.A.
Hackett, E. & W.	VI.	B	615	Collection of cereals	101	M.B.
Harrison, W. C., & Co.	VI.	C	619	Flour	385	N.A.
Hill, Chas.	IV.	B	406	Oil paintings	2, 14, 16, 81	C.H.
Hanton & Evans	I.	A	107	Monuments, &c.	O.	O.
Hall & Son, G.	VI.	D	629	Liqueurs	287	B.

Hall & Son, G.....	VI.	D	629	Cordials	60	M.B.
Hall & Son, G.....	VI.	D	628	Spirits	278	B.
Hall & Son, G.....	VI.	D	629	Cordials	305	B.
Hall & Son, G.....	VI.	D	629	Aerated waters	313	B.
Hall & Son, G.....	VI.	D	629	Bitters	321	B.
Hall & Son, G.....	VI.	D	629	Magnesia	331	B.
Huwald, H.	II.	D	217	Card table	33	M.B.
Hamer, J. H.	IV.	A	403	Brass salver	54	M.B.
Holten & Frost	II.	N	306	Saddlery, &c.	129	E.A.
Honey, R.....	II.	B	228	Turnery, &c.	338	N.A.
Harris & Co., B.	II.	M	298	Brushware	359	N.A.
Herring, F.	I.	A	107	Monuments	344	N.A.
Hawke, H. B., & Co.	V. VI.	EK	552	Steam engine	388	N.A.
Hawke, H. B., & Co.	VI.	K	669	Agricultural implements	420	A.I.H.
Hamilton, C. J.	VI.	G	620	Sauces	58	M.B.
Humbertson, Miss F.	II.	H	264	Cone-work	18	M.B.
Henderson & Marryatt	IV.	E	405	Water colors	93, 94	C.H.
Hooker, Jas.	V.	D	500	Iron, saw, &c.	453	M.H.
Hooker, Jas.	V.	G	556	Portable steam pump	444	O.
Hawke, Jas.	I.	A	109	Fireclay, &c.	177	E.A.
Hawke, Jas.	I.	A	108	Sands	192	E.A.
Honner, Rev. A.	IV.	B	405	Oil painting	52	C.H.
Hilfers, G., & Co.	VI.	C	619	Flour	381	N.A.
Holwell, R. G.	IV.	E	419	Architectural drawing	4	C.H.
Hardy, Arthur	VI.	A	603	Cork bark and acorns	52	M.B.
Hardy, Arthur	I.	A	103	Silver-lead ore	195	E.A.
Hawker, G. C.	VII.	A	711	Seaweeds	2	W.G.
Hodson, A. T.	—	—	146	Old Colonists' Court	34	M.B.
Higgins, Mrs.	IV.	E	429	Patchwork	115	M.B.
Hancock, G. F.	I.	A	103	Silver-lead ore	194	E.A.
Hilfers, Miss	IV.	B	406	Oil paintings	109, 110, 111, 112, 115, 116, 117, 118, 119, 120, 121, 122	C.H.
Hawson, A. E., Wollaston, T. C., Pearson, R.	I.	A	105	Gem stones	22	N.T.C.
Holtze, Maurice	—	—	—	Soils	31	N.T.C.
Holtze, Maurice	VI.	B	608	Agricultural produce	26	N.T.C.

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
F						
Horwood, J. H., & Co.	VI.	K	671	Windmill, &c.	443	O.
Horn, T. S.	I.	A	102	Silver ore	173	E.A.
Hartley, J. A., B.A., B.S.	III.	A	351	School books	354a	N.A.
Heyne, E. B., & Co.	VI.	B	615	Dried flowers, &c.	97	M.B.
Hydraulic Engineer.	V.	K	592	General appliances used by department	351	E.A.
Hawker, G. C.	VI.	A	641	Wool	398	N.A.
H. M. Government.	I.	A	100	Gold	1	N.T.C.
I						
Industrial School for Blind.	III.	D	377	Blind at work	227	B.
Irving, J.	IV.	B	406	Oil painting	13	C.H.
J						
Holtze, Maurice.	VI.	A	600	Woods	27	N.T.C.
Holtze, Mrs. M.	V.	C	620	Preserved fruits	28	N.T.C.
Just, H.	VI.	E	630	Fancy meats	87a	M.B.
Johnson, J.	IV.	B	406	Oil painting	41	C.H.
Jones, J. W., Conservator of Water	II.	J	282	Native weapons	461	Armoury
Jones, J. W., Conservator of Water	V.	A	501	Well boring appliances	208	E.A.
Jansen, Olaf.	I.	A	101	Gold quartz	2	N.T.C.
Jansen, Olaf.	I.	A	101	Gold	46	N.T.C.
Jacobs, Wm.	VI.	D	625	Wines	259	B.
Jenkinson.	IV.	D	415	Photographs	10	C.H.
Johns, Adam.	I.	A	103	Galena	8	N.T.C.
Johns, Adam.	I.	A	103	Tin ore	14	N.T.C.
K						
Kapunda Marble Company.	I.	A	107	Marble monuments	435	O.
Kiepert, J. H.	VI.	K	667	Plough-shares, &c.	355	N.A.
Knapman, W.	VI.	D	626	Beer	297	B.
Kimber, W. & M., & Co.	VI.	O	620	Jams	57	M.B.

K

Krichauff, F. C.	IV.	D	415	Photographs	226	E.A.
Kindermann, G., & Son	VI.	C	623	Confectionery	71	M.B.
Kempson, H.	I.	A	109	Pipeclay	178	E.A.
Kempson, H.	I.	A	109	Soapstone	190	E.A.
Kelley, T.	I.	A	107	Dressed stone	449	O.
Kerr, Thomas	II.	H	264	Walking sticks	28	M.B.
King, Miss R.	IV.	F	429	Tapestry	16, 17	C.H.
Kneese & Son	VI.	C	619	Flour	382	N.A.
Kennedy, W.	IV.	A	400	Carving on slate and stone	9, 10	M.B.
Kennedy, W.	IV.	A	400	Carving on slate and stone	137	E.A.
Kaines, N. E. T.	VI.	D	625	Wines	84	M.B.
Kaines, N. E. T.	VI.	D	625	Wines	261	B.
Kimber, C., & Son	VI.	C	619	Flour, &c.	380	N.A.
Kelly, Miss M.	IV.	F	429	Silk quilt	213	E.A.
Kapunda Institute ..	—	—	—	9, Old Colonists' Court	34	M.B.
Kapunda Herald	—	—	—	Reading stand	222	E.A.
Kingston & Christoe	I.	A	103	Tin ore	15	N.T.C.
Kemp, Rev. H.	V.	B	609	Cereals	29	N.T.C.
Knight, J. G.	I.	A	100	Specimens of rocks	30	N.T.C.
Knight, J. G.	IV.	B	611	Grasses	32	N.T.C.
Knight, J. G.	I.	A	101	Ball of gold	42	N.T.C.
Kelsey, Mrs.	VI.	I	661	Butterflies	33	N.T.C.

L

Lapidge, J. T.	II.	A	203	Australasomic ochre, &c.	159	E.A.
Leaver, Josh.	II.	H	261	Hats, &c.	198	E.A.
Lawton, J. A.	II.	N	305	Van, &c.	419	A.H.
Lindo, Miss E. J.	IV.	F	429	Seedwork	146	E.A.
Lindsay, R.	V.	F	550, 552	Marine Engine, &c.	452	M.H.
Lorraine, F. J.	III. & various	B & various	361 & various	Clock	106	M.B.
Lindsay, D.	II.	J	282	Native weapons	460	Armoury
Lindsay, D.	II.	J	282	Native weapons	44	N.T.C.
Lefever, E. T.	IV.	A	400	Bronze statue	38	M.B.
Laycock, M.	I.	A	109	Soapstone	191	E.A.
Lobethal Tweed Factory	II.	F	240	Tweeds, flannels, &c.	201	E.A.

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Department.	Section.	Class.	Exhibits.	No.	Locality.
L					
Lobelthal Tweed Factory.....	V.	524	Loom at work	370	N.A.
Lands Department	III.	351	Maps and plans	34	N.T.C.
Locomotive Engineer's Department	V.	592	Forge castings	467	Armoury
Littlefield & Clark	I.	103	Galena	9	N.T.C.
M					
Moss, S.	VI.	620	Jams, &c.	126	E.A.
Mayfield & Son, S.	II.	217	Furniture	22	M.B.
Mellor, T. F.	V.	505	Gold cradle	346	N.A.
Mehrtaus, L.	VI.	674	Bonedust, &c.	390	N.A.
Moser, A. G.	II.	301	Canework	144	E.A.
McCormac, A.	IV.	406	Portraits	119, 120	A.U.
McCormac, A.	IV.	406	Oil paintings	8, 9, 10	C.H.
Murray, Wm.	VI.	620	Jams	61	M.B.
Meteorological Society.....	III.	358	Instruments, &c.	55	M.B.
Murray, Alexr. J.	IV.	407	Water colors	75, 85, 86	C.H.
Mellor Bros.	VI.	671	Machinery	346	N.A.
Mellor Bros.	VI.	671	Agricultural implements	425	A.H.
Mellor Bros.	VI.	671	Agricultural implements	440	O.
Menz, W., & Co.	VI.	623	Biscuit trophy	68	M.B.
Maurice, Price	VI.	641	Angora mats	160	E.A.
Marks, Mrs., A.	VII.	711	Wax flowers and fruit	21	M.B.
Moller, F.	II.	304	Bicycle	151	E.A.
Murray & Sons	VI.	623	Trophy of confectionery, &c.	81	M.B.
Millar, James	III.	363	Marine model	469	Armoury
May Bros. & Co.	VI.	711	Machinery	410	N.A.
Mellor, J. F.	VII.	429	Flowers	72	M.B.
Mellor, Mrs. J.	IV.	200	Tapestry	11, 13, 19	C.H.
Mackinn, Hall, & Co.	II.	620	Insect powder	374	N.A.
Margitt, E.	VI.	288	Sauces	56	M.B.
Meyer & Sons	II.	217	Dentistry	55	M.B.
Matte, C.	II.	217	Inlaid table	26	M.B.
Moseley, H. J.	V.	200	Salt	364	N.A.

Moseley, H. J.	—	—	8, 9, Old Colonists' Court	34	M.B.
Moonta Copper Mines	I.	—	Collection of minerals, 1 to 46	181	E.A.
Marshall, J. & Co.	IV.	A	Cone of silver-lead ores	183	E.A.
Matthews, Miss	IV.	F	Tapestry	7, 8	C.H.
Murray, A. J.	II.	E	Architectural drawing	14	C.H.
McDougall & Gow	II.	D	Door	339	N.A.
Margetts, M. A.	II.	H	Leatherwork	142	E.A.
Martin, W. H.	II.	D	Mantel-pieces	345	N.A.
Martin, Jas. & Co.	V.	Various	Machinery-shed	445	O.
Martin, Thos.	I.	A	Flagging, &c.	450	O.
Martin, John	II.	A	Petrified tree, &c.	179	E.A.
Murray, Hon. D.	VI.	I	Shields of arms	477	Armoury
Maxwell, J.	IV.	K	Agricultural implements	424	A.I.H.
Miller, Mrs. K. St. Barbe	—	B	Oil painting	32	C.H.
Murray, J., Executors of	VI.	—	Prizes, cups, &c.	396	N.A.
Murray, J., Executors of	V.	G	Wool	399	N.A.
Monte, A.	IV.	A	Olive oil	86	M.B.
Mildred, H.	—	D	69 to 106, Old Colonists' Court	34	M.B.
Marshall, Henry	I. VI.	A, C	Angaston Court	78	M.B.
Morris, H. J.	—	B	2 to 57, Old Colonists' Court	34	M.B.
Miller, Mrs.	IV.	A	Oil painting	20	C.H.
Mount Gambier Court	I	A	Blocks of stone	439	O.
May, W. H.	VI.	K	Agricultural implements	427	A.I.H.
Magarey, T.	VI.	C	Wool	395	N.A.
Mount Gambier Produce (A. W. Stanford, & Co., agents)	{ VI. }	B	Mount Gambier produce	367	N.A.
Murray, Hon. A. B.	VI.	B	Wool	403	N.A.
Marine Board and H.M. Dockyard	V.	C	Castings, &c.	466	Armoury
Mount Wells Tin Mining Company (G. Dean)	I.	K	Tin ore	16	N.T.C.
Nash, J. G.	VI.	A	Turnery	135	E.A.
North, B.	VI.	C	Oils	63	M.B.
Nott, W. J.	VI.	A	Veneer of honeysuckle	49	M.B.
Nott, W. J.	V.	—	Model	468	Armoury

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
N						
Nelson, Mrs. Georgina, & Son	II.	H	263	Ivory work, &c.	181	E.A.
Newman, —	—	—	—	145, Old Colonists' Court	34	M.B.
Needham, Mrs.	IV.	F	429	Miscellaneous	1, 2, 3	C.H.
O						
Ostermeyer, Dewez, & Co.	VI.	G	641	Wool	405	N.A.
Old Colonist Association	III.	D and A	354, unenum- rated	Old Colonists' Court	34	M.B.
P						
Patrick, Wm.	I.	A	102	Copper ores	184	E.A.
Pfaum, F., & Co.	VI.	A	603	Barb	245	B.
Point Macleay Mission Station	II.	I	282	Native weapons	457	Armoury
Port Darwin Tin Mining Company	I.	A	103	Tin ore	17	N.T.C.
Port Adelaide Institute	—	—	—	178, Old Colonists' Court	34	M.B.
Penfold & Co.	VI.	D	625	Wines	260	B.
Penfold & Co.	VI.	D	625	Wines	102	M.B.
Port Pirie State School (R. H. A. Braddock, master)	II.	K	283	Chemicals	139	E.A.
Pulleine, R. H.	VI.	F	635	Skins of birds	41	N.T.C.
Pater, Mrs. T. K.	VI.	I	661	Butterflies	35	N.T.C.
Port Darwin Gold Mining Co.	I.	A	101	Quartz	3	N.T.C.
Pascoe, W. E.	I.	A	101	Rock crystal	183	E.A.
Phillips, W.	IV.	B	406	Oil painting	123	C.H.
Peters & Fuller	II.	N	304	Buggy	234	B.
Paternoster, E. J.	VI.	L	671	Windmill, &c.	442	O.
Pearce, Winsey, & Co.	VI.	L	603	Barb	246	B.
Poele, J. R. F., & Co.	VI.	C	620	Sauces	361	N.A.
Protector of Aborigines	II.	J & K	282, 265	Native weapons	445	Armoury
Peninsula and Oriental Steam Navi- gation Co.	V.	I	589	Model of steamship	37	M.B.
Peninsula and Oriental Steam Navi- gation Co.	V.	I	589	Model of steamship	40	M.B.

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Prout, F., Capt.	I.	A	103	Manganese	172	E.A.
Prout, F., Capt.	I.	A	107	Soapstone	191a	E.A.
R						
Rounsevell, John	VI.	C	641	Wool	404	N.A.
Ryland, G.	VI.	B	612	Potatoes	38	N.T.C.
Rounsevell, Ada	IV.	F	429	Tapestry	15	C.H.
Rhodes, W. & T.	II.	D	227	Baths, &c.	125	E.A.
Robertson, J. H.	III.	B	364	Violins	32	M.B.
Ramsay, J. G., & Co.	VI.	K	669	Stripper	412	N.A.
Ramsay, J. G., & Co.	VI.	K	689	Stripper, &c.	423	A.I.H.
Robson, T. B.	VI.	C	620	Dried fruits and wines	93	M.B.
Richman, J. M.	VI.	D	625	Wines	266	B.
Ryan & Co.	VI.	D	626	Beer	301	B.
Ryan & Co.	VI.	D	620	Aerated waters	63	M.B.
Ryan & Co.	VI.	D	628	Spirits	277	B.
Ryan & Co.	VI.	D	629	Cordials	308	B.
Ryan & Co.	VI.	D	629	Aerated waters	314	B.
Ryan & Co.	VI.	D	629	Bitters	322	B.
Ryan & Co.	VI.	D	620	Sauces	333	B.
Reid, T. S.	II.	D	217	Bamboo garden table, &c.	24	M.B.
Randell, E. D.	IV.	B	406	Oil paintings	124, 125	C.H.
Randell, E. D.	IV.	B	407	Water color	107	C.H.
Rake, Miss E.	IV.	B	406	Oil painting	107	C.H.
Ragless, Miss S. A.	IV.	B	429	Needlework	2	C.H.
Rapress, Miss S. A.	IV.	B	406	Oil paintings	35, 37, 103	C.H.
Reid, John	VI.	F	634	Leather	228	B.
Ray, W. H.	II.	N	304	Carriages	238	B.
Ray, W. H.	II.	N	304	Buggy	413	N.A.
Rothe, B. S.	VI.	I	662	Collection of insects	202	E.A.
Rogerson, G. A.	III.	B	364	Piano	35	M.B.
Reid, D.	VI.	E	624	Leathers	230	B.
Reichardt, O. T. C.	III.	A	351	Plan	37	N.T.C.
Royal Commission for S.A.	I.	A	104	Collection of S.A. Minerals, No. 1 to 385	180	E.A.
Royal Commission for S.A.	VII	V	711	Large cases of transparencies of S.A. fruits	93	M.B.

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
R						
Royal Commission for S.A.	VII.	B	711	Wax fruits	96	M.B.
Royal Commission for S.A.	I.	A	103	Tin	174	E.A.
Royal Commission for S.A.	VI.	D	415	Photographs.	455	Armoury
Royal Commission for S.A.	—	—	—	183, Old Colonists' Court	34	M.B.
Royal Commission for S.A.	IV.	A	400	Blackfellow	431	O.
Royal Commission for S.A.	—	—	—	Agricultural & Horticultural trophy	88, 89	M.B.
Royal Commission for S.A.	VI.	F	634, 635	Furs and skins	6	M.B.
Royal Commission for S.A.	VI.	A	602	Turnery	46	M.B.
Royal Commission for S.A.	IV.	A	400	Black figure	90	M.B.
Royal Commission for S.A.	VI.	H	658	Ostrich eggs.	51	M.B.
Royal Commission for S.A.	II.	H	264	Walking-sticks	29	M.B.
Royal Commission for S.A.	VI.	O	624	Olus	86	M.B.
Royal Commission for S.A.	VI.	C	620	Fruits, jellies, &c.	94	M.B.
Royal Commission for S.A.	IV.	F	429	Miscellaneous	1 to 14	C.H.
Redwick, R.	VI.	C	624	Olive oil	86	M.B.
Robertson, John	—	—	—	155, Old Colonists' Court	34	M.B.
Robinson, Mrs. R. H.	—	—	—	182, Old Colonists' Court	34	M.B.
Rains, W.	—	—	—	Enquiry office, &c.	163	E.A.
Registrar & Observer	—	—	—	Oil paintings	126, 127	C.H.
Robbie, W.	IV.	B	406	Galena	10	N.T.C.
Robinson, J. B.	I.	A	103	Wines	270	B.
Ross, Sir R. D.	VI.	D	625			
S						
Solomon, Miss M.	IV.	F	429	Tapestry	1, 10, 12, 18	C.H.
Sherring, J., & Co.	II.	I	271	Printing, &c.	1, 343	N.A.
Saape, A.	IV.	A	400	Medallions	1, 2, 3, 4, 5, 6	C.H.
Saape, A.	IV.	A	400	Busts	116, 117	A.G.
Simpson & Son	II.	D	217	Garden seats	439	O.
Simpson & Son	II.	K	692	Ironmongery and tinware	130	E.A.
Simpson & Son	II.	D	217	Safes	206	E.A.
Simpson & Son	VI.	L	673	Iron troughs, &c.	437	O.
Simpson & Son	II.	J	277	Torpedo	476	Armoury

Shierlaw, G. & W.	II.	H	259	Clothing, hats, &c.	199	E.A.
Smith, S., & Son.	VI.	D	625	Wines	265	B.
Smith, S., & Son (Angaston Court)	VI.	D	415	Photographs	78	M.B.
Smith, S., & Son (Angaston Court)	VI.	D	625	Wines, &c.	78	M.B.
Smith & Son.	VI.	D	625	Liqueurs	292	B.
Seppelt, B.	VI.	D	628	Spirits	275	B.
Seppelt, B.	VI.	D	625	Wines	65	B.
Seppelt, B.	VI.	D	625	Wines	258	B.
Seppelt, B.	VI.	D	629	Liqueurs	286	B.
Seppelt, B.	VI.	D	629	Cordials	303	B.
Seppelt, B.	VI.	D	629	Bitters	319	B.
Seppelt, B.	VI.	D	627	Vinegar	330	B.
Shakespeare, Jas.	VI.	B	406	Oil paintings	5, 11, 15	C.H.
Schmidt, H. G., & Co.	II.	A	205a	Cigars	162	E.A.
Scott, Mrs. J. L.	II.	E	231	Lace	132	E.A.
Scott, J. L.	VI.	A	602	Turnery	132	E.A.
Schroder, F. W.	II.	H	264	Walking sticks	143	E.A.
Scriven Bros.	VI.	E	634	Dressed leather	148	E.A.
Scriven Bros.	VI.	E	634	Leather	229	B.
Stephens & Co.	VI.	D	626	Cordials, &c.	77	M.B.
Stephens & Co.	VI.	D	625	Spirits	280	B.
Stephens & Co.	VI.	D	629	Liqueurs	289	B.
Stephens & Co.	VI.	D	629	Beer	299	B.
Stephens & Co.	VI.	D	629	Cordials	308	B.
Stephens & Co.	VI.	D	629	Bitters	324	B.
Stephens & Co.	VI.	D	283	Ointment	149	E.A.
Seacombe, J.	II.	K	206	Terra cotta	164	E.A.
Shearing, W.	II.	B	415	Photograph	9	C.H.
Sweet, Capt.	VI.	D	667, 669	Agricultural implements	415	A.I.H.
Stott, J. W., & Son.	VI.	K	239	Dyed wools, &c.	212	E.A.
Schlork, F. H.	II.	E	271	Stationery	336	N.A.
Sands & McDougal.	VII.	I	702	Flower stand	96	M.B.
Smith, Edwin.	II.	B	217	Furniture	23	M.B.
Simpson, F.	IV.	D	419	Architectural drawing	7	C.H.
Summerhayes, E.	II.	C	646	Silks	112	M.B.
Scott, Miss May.	II.	G				
Sandford, A. W., & Co. (Agents for Mount Gambier produce)	VI.	E	631	Cheese, &c.	249	B.

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Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
Sandford, A. W., & Co. (Agents for Mount Gambier produce).....	VI.	B	609	Mount Gambier produce	367	N.A.
Smart, Mrs. B. K.....	IV.	B	406	Oil painting	26	C.H.
Singleton, F. C.....	I.	A	103	Silver ore	175	E.A.
Singleton, F. C.....	IV.	B	406	Oil paintings	105, 106	C.H.
Sells, Rev. A., M.A.....	IV.	B	407	Water colors	63, 64, 69, 72	C.H.
Schomburgk, Dr.....	VI.	A	605	Herbarium	8	M.B., W.G.
Stirling District Council.....	I.	A	107	Freestone	434	O.
Scott, D. W.....	I.	A	102	Copper ore	186	E.O.
Stadson A.....	III.	B	369	Safety signal	471	Armoury
Stirling, E. C. & J. L.....	VI.	G	641	Wool	402	N.A.
Salter, W., & Son.....	VI.	D	629	Liqueurs	285	B.
Salter, W., & Son.....	VI.	D	625	Wine	255	B.
Solomon, S.....	IV.	D	415	Photograph	36	M.B.
Sabley, Angaston Marble Co.....	—	—	—	Angaston Court	78	M.B.
Slaw, G. G.....	—	—	—	No. 15 to 47, Old Colonists' Court	34	M.B.
Slipper, S. J.....	—	—	—	No. 110 to 134, Old Colonists' Court	34	M.B.
Stock, J.....	—	—	—	Old Colonists' Court	34	M.B.
Scott, J.....	—	—	—	171, Old Colonists' Court	34	M.B.
Shakeshaft, W.....	—	—	—	179, Old Colonists' Court	34	M.B.
Stokes, W. P.....	—	—	—	Neptune's cup	91	M.B.
Schlang, S.....	II.	H	263	Jewellery	107	M.B.
Schlang, S.....	II.	A	200	Baking powder, &c.	147	E.A.
S. A. Government.....	I.	A	101	Gold	109	M.B.
S. A. Government.....	I.	A	101	Retorted gold	110	M.B.
S. A. Ostrich Co.....	VI.	F	635	Ostrich feathers, &c.	118	M.B.
Surveyor-General's Dept. (Goyder, G. W.).....	III.	A	351	Map	122	E.A.
Surveyor-General's Dept. (Goyder, G. W.).....	III.	A	351	Map	223	E.A.
Stephens, Dr.....	I.	A	103	Silver-lead ore	198	E.A.

Shaw, R. H.	IV.	B	406	Oil painting	28	A.H.
Sims, A.	IV.	B	406	Oil painting	57, 59	C.H.
Salmon, A. G.	IV.	E	419	Architectural drawings	15	C.H.
S. A. Amateur Photograph Society	V.	D	415	Photograph	18a, 18b	C.H.
Schroeder, E. W.	IV.	D	625	Wines	267	B.
Sage, S. & W.	IV.	D	625	Wines	268	B.
Searcy, A.	VI.	I	664	Trepang	39, 40	N.T.C.
Smith & Swan.	VI.	A	641	Wool	401	N.A.
Smyth, C. E. O.	VI.	I	282	Native weapon	478	Armoury
Solomon, V. L.	I.	A	102	Copper ore	20, 21	N.T.C.
Solomon, V. L.	I.	A	103	Silver ore	11	N.T.C.
Solomon, V. L.	I.	A	103	Tin ore	18	N.T.C.
Solomon, V. L.	I.	A	—	Pearl, &c.	43	N.T.G.
Shand, C.	VI.	D	629	Beer	300	B.
Stubbins, T. K.	II.	D	228	Mouldings, &c.	341	N.A.
S. A. Gas Co.	II.	D	223	Gas stoves, &c.	411	N.A.
Savage Farm	—	—	—	Mangel wurzel	409	N.A.
Schickel, H.	III.	A	356	Bookstall	41	M.B.
Strawbridge, Mrs.	IV.	B	406	Painting	70	M.B.
Strawbridge, Mrs.	IV.	B	407	Water color	106	C.H.

T

Tregillas, D.	I.	A	102	Malachite	207	E.A.
Tannert, L.	IV.	B	406	Oil paintings	19, 23	C.H.
Thomas, W. K. & Co.	V.	E	540	Printing press	347	N.A.
Trustlove & Addison	VI.	C	619	Flour	377	N.A.
Trewenack, J. H.	II.	B	206, 207, 208, 210	Terra cotta fountain	429	O
Trewenack, J. H.	II.	B	206	Collection of drain tiles, &c.	433	O
Troy, E. F.	IV.	E	421, 422	Graining and marbling	225	E.A.
Teakle, Mr.	II.	H	264	Flowers	73	M.B.
Tapscott, Saml.	VI.	E	631	Cheese	250	B.
Todd, Chas., C.M.G.	III.	B	358	Telegraphic telephone, cables, &c.	79	M.B.
Turner, J.	IV.	A	405	Wooden chain	47	M.B.
Tilley, B.	VI.	D	626	Beer	296	B.

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T Name.	Department.	Section.	Class.	Exhibit.	No.	Locality.
Thomas, Mrs. R. G.	—	—	—	153 to 154, Old Colonists' Court	34	M.B.
Turck, Miss E.	IV.	B	406	Oil paintings	56, 101	C.H.
Turck, Miss E.	IV.	B	407	Water colors	54, 56, 100	O.H.
Taplin, Rev. G.	IV.	D	415	Photographs	463	Armoury
Thompson, W. F.	VI.	D	625	Wines	263	B.
Thompson, W. F.	VI.	D	625	Wines	254	B.
Thomas, W., & Co.	VI.	C	619	Flour	383	N.A.
Tamlin & Coombe	II.	M	299	Ropes, &c.	392	N.A.
U						
Union Engineering Company	V.	K	592	Castings, &c.	352	N.A.
United Vigneron Company	VI.	D	625	Wines	92	M.B.
Upton, J. A.	IV.	B	406	Oil paintings	36, 103	C.H.
V						
Vosz, H. L.	II.	D	219	House decorations	220	E.A.
W.						
Ware, T. L. & A. W.	VI.	D	626	Beer	294	B.
Walsh, R.	II.	D	264	Penknife-carving	20	M.B.
Wilkinson & Mason	VI.	D	625	Wines	62	M.B.
Wilkinson & Mason	VI.	D	625	Wines	269	B.
Wells, B.	II.	D	217	Showstand	43	M.B.
Wigg, E. S., & Son	II.	I	271	Stationery, &c.	335	N.A.
Walker, G. H.	VI.	I	589	Half model	474	Armoury
Walters & Co.	V.	E	633	Bee culture	64	M.B.
Waverley Vinegar Co.	VI.	D	627	Vinegar, &c.	126, 127	E.A.
Wolf, Anton	II.	D	220	Seaweed frames	141	E.A.
Walker, G. H.	IV.	B	406	Oil painting	211	E.A.
White, John	IV.	B	406	Oil paintings	6, 18	C.H.

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Wilson, Mrs. C. A.	—	—	—	147 to 151, Old Colonists' Court	34	M.B.
Wallaroo Smelting Company	I.	A	102	Copper trophy	187	E.A.
Walcot, Mrs.	IV.	D	407	Water color	46	C.H.
Wilcox, C.	VI.	B	608, 609	Hay, wheat, oats, &c.	393	N.A.
Wurm, F.	VI.	C	620	Dried fruits	69	M.B.
Westwood, T. A.	II.	H	260	Ladies' and children's outfits	200	E.A.
Wiener & Hilbig	VI.	K	667	Agricultural implements	426	A.I.H.
Walter & Morris	VI.	A	602	Turnery	340	N.A.
Wheatley, Jas.	VI.	K	670	Agricultural implements	416	A.I.H.
Wendt, J. M.	II.	H	263	Jewellery	114	M.B.
Wilhelm, P.	VI.	A	602	Turnery	30	M.B.
Welsh, Sarah	IV.	F	429	Tapestry	9	C.H.
Werlin, Miss J.	II.	H	264	Ornamental flowers	156	E.A.
Williams, Geo.	IV.	B	406	Oil paintings	47, 48, 49, 50	C.H.
Wallaroo Mines, Limited	I.	A	104	Collection of minerals, 1 to 37	182	E.A.
Wilkinson, W. B.	II.	J	282	Native weapons	458	Armoury
Wright, Edmund W.	VI.	D	625	Wines	263	B.
Wallenstein, H. M.	VI.	A	600	Jugs	48	M.B.
Widgery, Mrs.	IV.	B	406	Water colors	82, 108	C.H.
Wrightman, M.	V.	I	589	Model of sloop	472	Armoury
Ward, T., Mrs.	V.	I	661	Butterflies	36	N.T.C.
Y.						
Young, C. B.	VI.	D	625	Wines	266	B.
Z.						
Zoerner, M. M. J.	II.	B	206	—	—	—

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